The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 79, NO. 16 CHICAGO, ILLINOIS OCTOBER 14, 1922

NEW METHODS OF STUDYING GASTRIC PERISTALSIS *

WALTER C. ALVAREZ, M.D.
SAN FRANCISCO

It is hard for a moment to realize that our knowledge as regards gastric physiology is today in much the same stage as it was as regards cardiac physiology back in the early seventies, before the sequence of the beat in sinus, auricles and ventricles had been studied by means of graphic records. In those days the research workers simply watched the slowly beating hearts of dying amphibians and tried to understand the movements which they saw, much as we, today, try to understand the sequence of the gastric waves as they appear before us on the fluorescent screen. To be sure, we obtain graphic records by taking plates, but such plates are snap shots which cannot help the physiologist very much. A few roentgenologists, notably Rieder in Europe and Cole in America, have secured interesting serial roentgenograms of the stomach; but the technic has been so difficult and the apparatus so expensive that, so far as I know, the method has not been used in any physiologic laboratory. Cannon did much of his epoch making work with the roentgen ray; but his records consisted mainly of tracings of the shadows which he saw on the screen. Carlson and his students have done an enormous amount of work with balloons inserted into the stomachs of men and animals; but, as they admit, such balloons slip about; it is hard to say just where they are; and they certainly cannot give us information as to the way in which the waves travel over the organ. Recently, Wheelon and Thomas [1] have invented a type of anchored balloon with the help of which they have obtained interesting records from the pyloric region.

It has always seemed to me that an exact knowledge of the movements of the stomach could be secured best by fastening light recorders very gently to the outer surface of the organ; and in 1914, with the help of a simple little enterograph, I was able to obtain simultaneous records from the middle region and the pyloric antrum of a few rabbits and cats. Several years before, Hofmeister and Schütz,[2] and Sick and Tedesko [3] obtained somewhat similar records by fastening light heart levers to two or three places on the excised stomachs of laboratory animals. Such stomachs, kept in warm, oxygenated Locke's solution, will often show considerable activity for hours; and I have secured a number of interesting kymographic and electrographic records from them. The technic is naturally much easier than that required when we try to record the small, weak contractions of the cardiac end of the intact stomach, situated as it is high up under the diaphragm and moving constantly with respiration. The results obtained with the organ in situ are so much more trustworthy, however, that we must continue to grapple with the technical difficulties which stand in our way.

A number of these difficulties have now been conquered sufficiently so that we can get simultaneous mechanical records from five or six parts of the stomach. I shall not attempt here to describe the apparatus, because it is still in the stage of constant change and improvement. Another way of attacking the problem is to detect and make records of the delicate action currents which can tell us so much about what is going on in the muscle. Should a study of these currents in the stomach yield but a tenth of the information which a similar study has yielded in the fields of heart physiology and pathology, the science of gastro-enterology will be put on a new footing. Much of the technic for getting electrogastrograms and enterograms has already been worked out, and two brief reports on the subject have been published.[4] One of them contains a reproduction of the first human electrogastrogram to be taken.

Naturally, in the first stages of such an investigation, the interpretation of the records is difficult, and it is quite essential that the electrical changes be compared with mechanograms made at the same time and at the same place. Although this need has added greatly to the technical difficulties which already were troublesome enough, we have during the last few months secured a number of records like those in Figure 1, which show simultaneous mechanograms and electrograms from two parts of the stomach or bowel. They show that in most cases the electrical wave looks very much like the corresponding mechanical one. The two run closely together; and after a while we shall probably be able to read the meaning of the electrical records so clearly that we can dispense with the mechanical ones and can continue with the less troublesome electrical technic.

* From the George Williams Hooper Foundation for Medical Research and the Department of Medicine, University of California Medical School.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Wheelon, H., and Thomas, J. E.: J. Lab. & Clin. Med. **6**: 124 (Dec.) 1920; Am. J. Physiol. **59**: 72 (Feb.) 1922.

2. Hofmeister and Schütz: Arch. f. exper. Path. u. Pharmakol. **20**: 1, 1885.

3. Sick and Tedesko: Deutsch. Arch. f. klin. Med. **92**: 416, 1908.

4. Alvarez, W. C., and Mahoney, L. J.: Am. J. Physiol. **58**: 476 (Jan.) 1922. Alvarez, W. C.: The Electrogastrogram and What It Shows, J. A. M. A. **78**: 1116 (April 15) 1922.

WHAT CAN WE LEARN WITH THE NEW TECHNIC?

The next question is: What is being learned with these methods? In the first place, we are learning something about the place of origin of the gastric waves and how they travel over the stomach. As I pointed out in the previous articles, many of the records suggest strongly that the waves ordinarily arise at a point on the lesser curvature near the cardia. That may perhaps be the normal pacemaker, which sends out ripples which deepen into waves in the lower third of the stomach. Other records show signs of a shifting of the pacemaker, while others, again, show that two parts of the stomach are contracting with independent rhythms. Just as in the heart, so in the stomach, there appear to be gradations from transient blocks to complete dissociations. Such blocks have been found most frequently at the junction between the body of the stomach and the pyloric antrum; but a number of the records show that they can occur elsewhere. In the excised stomachs of rabbits, cats and dogs we can often see the lower end of the esophagus contracting powerfully and rhythmically, but only occasionally sending a wave over the adjacent stomach. Other records show what I have frequently observed on the fluorescent screen, and that is, a series of contractions which do not spread over the stomach, but spring up and apparently die away in the same place.

Another interesting observation is that a contraction near the cardia or in the preantrum may be followed almost instantly by a contraction of the pyloric antrum or of the stomach as a whole. This "systole" was seen years ago by Cole on his serial roentgenograms of human stomachs; but as the pacemaker seems often to give rise to a systole and peristaltic wave at the same time, the double nature of the contraction can hardly be recognized on the screen; and no one has felt inclined to pay much attention to Cole's observation. I admit that when Cole showed me his plates I thought that the phenomenon must be rare and of little significance. Now that I find it so commonly in my records, I am glad to express my apologies to Dr. Cole and my willingness to believe that many things appear on the fluorescent screen which we are not quick enough or prepared enough to see. For that matter, watching three waves going over the stomach at one time is like watching an expert at the shell game: it is not likely to yield exact or trustworthy information.

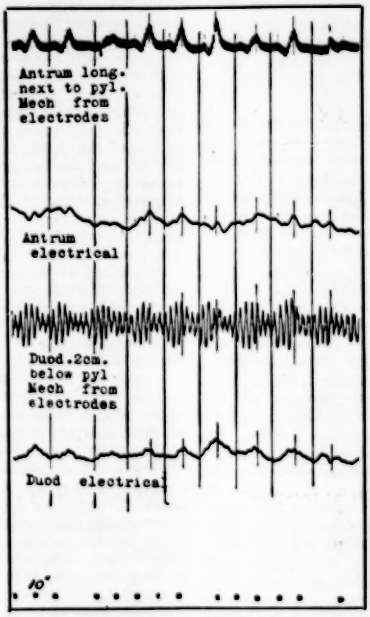

Antrum long. next to pyl. Mech from electrodes
Antrum electrical
Duod. 2cm. below pyl Mech from electrodes
Duod electrical
10"

Fig. 1.—Electrograms from antrum near the pylorus, and from duodenum 2 cm. below, in a rabbit. The mechanograms, recorded simultaneously with the electrograms, represent the movements of the electrodes as the muscle contracted. An upward movement on the mechanical records signifies contraction, and in the electrical records it signifies a negativity of the orad electrode. The time record indicates intervals of ten seconds. The small waves on the first antral record are respiratory in origin. Note the increase in amplitude of the duodenal contractions with the arrival of each gastric wave at the pylorus. The vertical lines have been drawn to indicate synchronous points on the record.

But to return to the systoles: It may be that they interfere sometimes with the emptying of the stomach because, as can be seen from Figure 2, the waves marked *A*, *B* and *C*, which were seen to travel over the stomach, reached the pylorus while the muscle there was partly contracted. The record of the antral contraction often shows two components, and sometimes even three. The first one may represent the tendency of the muscle to contract with its own natural rhythm; the second may represent a systole, while the third represents the arrival of a peristaltic wave. These multiple activities sometimes make it almost impossible to interpret the electrograms. If we glance again at Figure 2, we see that in each set of contractions there is a second cardiac one which fails to give rise to any appreciable peristaltic wave. This second cardiac hump is so often synchronous with the arrival of the peristaltic wave at the pyloric antrum that I have often obtained the impression that a systolic type of impulse has shot backward. Hence, for convenience' sake, I have come to call this well defined and easily recognizable type of gastric activity "shuttle rhythm." Sometimes the impulse seems to shoot back so quickly that the two cardiac humps fuse to a greater or less degree.

In other records, we find a series of single gastric systoles with either the cardia or some other part of the stomach slightly in the lead. In some excised stomachs, we saw what appeared to be peristaltic waves; but the records showed that they were more like systoles. All parts of the stomach began to contract at the same time; but as it took the muscle in the lower end of the stomach a progressively longer time to get under way, the appearance was that of a wave spreading downward.

Figure 3 shows a common type of peristalsis in which some antral contractions are much more powerful than others. We see that commonly in man; and the frequency with which these large waves appear undoubtedly has much to do with the rate of emptying of the stomach, and perhaps a good deal to do with the production of pain and distress in diseased states. The graphs bring out the interesting fact that this increase in activity must often be purely a function of the pyloric antrum, because one can see no sign of corresponding differences in the size of the waves in the body of the stomach a centimeter above. There are some records which suggest strongly that the variation in the size of the antral contractions may be an interference phenomenon between the fundus rhythm and

V. 192

the inherent rhythm of the antral muscle. Previous experiments have shown me that the excised antral muscle will contract about three times a minute. If this should happen to be the rate of the waves coming down over the stomach, the antral contractions could easily be uniform in size and strength. When, however, there is a slight difference in rate, it might account for the presence of larger waves when the rhythms coincide and smaller ones when they conflict. Irregularities in the recurrence of these beats must be expected because other rhythmic components will come in by way of the duodenum.

This difference in the activities of the two functional parts of the stomach, the "crop" and the "gizzard," is brought out even more sharply in the records showing blocks and dissociations. A kymographic record of these blocks was shown in one of the preceding articles, and two electrograms depicting the same thing are shown now in Figure 4. Simultaneous mechanograms and electrograms made so far show that when the currents are absent from the antrum the contractions are also absent; but in one case when, for a short time, no contractions could be detected, weak action-currents still appeared at regular intervals. So far I have not seen anything on the records which looks like the common cardiac 2:1 or 3:1 block. The gastric blocks look more like those which we see in Stokes-Adams disease.

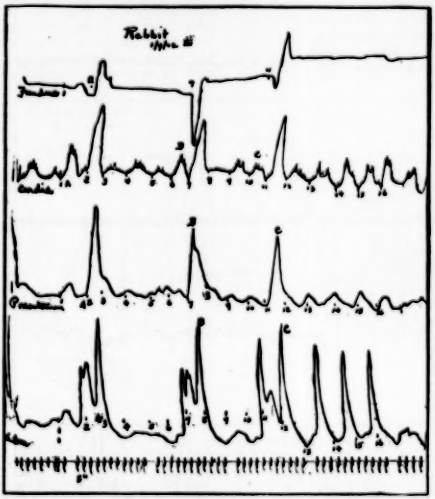


Fig. 2.—Mechanograms from the fundus, cardia, preantrum and antrum of a rabbit's stomach. The small waves just visible on the second record are respiratory in origin. The interval on the time record is five seconds. The figures represent corresponding points on the four records, while the letters *A*, *B* and *C* show that certain contractions were part of one peristaltic wave.

Another way in which the differences between the physiologic characteristics of the fundus and pyloric antrum can be brought out is by stimulating the vagus nerve. In a few such experiments done in my laboratory on rabbits, it was a striking thing to see the recording lever attached to the body of the stomach shoot upward (indicating contraction) while the lever on the antrum dropped. Other experiments have suggested that the pyloric antrum is more sensitive to all inhibitory influences than is the body of the stomach.

To me, one of the greatest surprises has been the discovery that any group of muscle fibers in the stomach wall may respond at the same time to two or more rhythmic activities. Thus, it may show small contractions perhaps every five seconds. These probably represent the local inherent rate, i. e., the rate at which the muscle contracts when excised and put into warm oxygenated Locke's solution. Besides the small contractions there may be slow tonus waves coming every minute or two. These tonus changes seem to be going on constantly throughout the digestive tract, and I believe that they must play a large part in regulating and directing peristalsis. The few records which we have obtained of these rhythms suggest that they can sometimes be captured and made to follow other regularly recurring impulses whose rate is not too widely different. This can be seen at the pyloric line where the duodenal tone rises shortly or immediately after the arrival of each gastric wave. The interesting point is that during intervals of complete gastric quiet, when even the action currents are absent, the duodenal tonus rhythm may continue unchanged, showing that it can be just as independent as the similar rhythms which can easily be demonstrated in the ileum and colon. Furthermore, when the stomach starts up again it does not always succeed immediately in capturing and dominating the duodenal tonus rhythm. As will be seen from Figure 1, this tonus wave shows itself sometimes only as a rhythmic increase in amplitude of contraction. It appears also in the electrograms as an increase in the strength of the action current.

But to return to multiple rhythms in the stomach: (1) There are small, frequent waves analogous probably to the rhythmic contractions of the bowel; (2) there are tone changes like those in the bowel; and (3) there are peristaltic waves corresponding probably to the peristaltic rushes in the small bowel and the mass movements in the colon. These compound movements are seen most often in the body of the stomach, but sometimes in the antral records. The electrograms from the fundus generally show a series of small respiratory deflections, while those from the antrum often show a small deflection synchronous with the duodenal contractions. These are probably transmitted by conduction through the tissue, although I have seen similar little humps on some of the mechanical records from the antrum. These, however, probably represented little pulls on the gastric recording appartus by the adjacent bowel.

One more observation requires comment at this time, and that is that many of the mechanical records from the fundus show relaxations corresponding to the passage of the peristaltic waves. The fundus has a little different embryologic development from the rest of the stomach, and there are a number of indications that the working out of its rhythmic activities will be quite a problem in itself. In many of the records (both mechanical and electrical) from the lower end of the stomach there are signs of a preliminary relaxation before the contraction; but it may be that this is due simply to a passive stretching of the muscle as it is pulled on by the contracted area just above.

Certainly a large proportion of the records show no sign of a preliminary relaxation such as we would expect if the "law of the intestine" were an important factor in regulating peristalsis.

Enough has been said, it seems to me, to show that large gaps exist in our knowledge of gastric peristalsis. It is this lack of exact information which has been such a handicap to the surgeons in their efforts to cure gastric and duodenal ulcers. They have had to learn by sad experience not to make such things as long loop gastro-enterostomies and V-shaped excisions on the lesser curvature, but just why they still do not know. I sometimes think of the troubles the surgeons would have fallen into if they had been able to cut out infarcted areas in the heart and to short-circuit stenosed valves as easily as they operate on the stomach; how many disturbances of conduction they would have produced and how many patients they would have sacrificed until they had learned empirically to keep away from the bundle of His and its important branches. This only emphasizes the fact that the physician is too often called on to attempt repairs on a structure the normal workings of which he has not yet been able to understand. Logically, we should learn all about the physiology of an organ before we attempt to repair a diseased one; but unfortunately the demands of the sick are too urgent; we must do our best with what little knowledge we have; but at all times we must keep our eyes fixed eagerly on the laboratories, from which must come some day the needed help and guidance.

Fig. 3.—Mechanograms from the fundus, cardia, preantrum and antrum of a rabbit's stomach. The time interval represents five seconds. Note the large antral contractions which seem to arise locally.

SUMMARY

Knowledge of gastric physiology is still largely in the crude stage of purely visual observation.

The problem is now being attacked with methods for obtaining multiple and simultaneous mechanical and electrical records from the wall of the stomach.

Something has been learned about the gastric pacemaker; about different types of rhythmic activities; about gastric "systoles"; about "blocks" and dissociations of activity between the body of the stomach and the pyloric antrum.

Stimulation of the vagus produces quite different effects in the fundus and in the antrum.

It is surprising to find areas on the stomach in which the muscle is responding at one time to two or more sets of rhythmic impulses.

Some observations have been made on the influence of the stomach on the duodenum.

The records generally show little sign of the "law of the intestine."

The fundus sometimes appears to relax while the rest of the stomach is contracting.

The large gaps which exist in our knowledge must be filled if the surgeon is to operate safely on diseased stomachs.

177 Post Street.

ABSTRACT OF DISCUSSION

DR. A. J. CARLSON, Chicago: We will all agree in Dr. Alvarez' conclusions; namely, that this is the beginning of analysis of gastro-intestinal peristalsis by a new method. But we should keep in mind that we do a great deal of violence to the normal gastric mechanism the moment we put the animal under anesthesia or open the abdomen. I am not surprised at the irregularities which he describes. I should have been surprised if he had not found them. We must be very careful in ascribing physiologic significance to experimental contrivances that obviously are not physiologic. But I certainly wish Dr. Alvarez to go on and see what the method will yield, even if the results are mainly pathologic. If the method would work on the animal or person without anesthesia and without opening the abdomen, then we should have a measure equal to and, in the finer analysis, superior to the roentgen ray. But when we must induce anesthesia and open the abdomen, I am afraid the method is going to have very limited physiologic application. I believe Dr. Alvarez will agree with me in the view that the roentgen ray and the balloon methods have not as yet been exhausted in physiologic and pathologic investigations. It is, indeed, a curious thing that the great divergence in behavior of the different regions of the gastro-intestinal tract below the cardia have no gross anatomic basis for these differences. If we did not know what occurred under normal conditions, we could never infer it from gross or microscopic structure. I have recently been particularly interested in the lower esophagus and cardia, and it is a fact that, even in the normal animal with no anesthesia, by balloon methods we see conditions in which the cardia beats or contracts, apparently entirely independent of the stomach. Dr. Alvarez is the happy combination of physiologist and clinician, belonging in the same group as our late Dr. Samuel J. Meltzer. I say happy combination, because that gives a chance to carry over and use the exact criteria and critical control on clinical material, so far as these can be applied, that we use in the laboratory. It would be unfortunate if these persons who work both in the laboratory and in the clinic should reverse the process and carry over into the laboratory field

V. 192

some of the loose methods in observation and thought that unfortunately are not so uncommon in purely clinical work. But I must add that during the last fifteen or twenty years physiologists have also committed many sins and put obstacles in the way of broad physiologic progress, by drawing far-reaching physiologic conclusions on the basis of unphysiologic experiments.

DR. ALFRED A. STRAUSS, Chicago: It is true, as Dr. Alvarez has stated, that some of the interpretations of these contraction waves, as recorded by his electrical instrument, are difficult to understand. I have recently done some experimental work on the emptying time of the stomach, which is really a check up on an operative procedure which we have done clinically for about seven years. The procedure was the partial resection of the sphincter of the pylorus and pyloric antrum. When this is done in the human being, following a resection of an ulcer on the lesser curvature, the stomach will empty about twice as quickly as it will normally. We have followed this up clinically in a large series of cases. The animal experimental work checks up with this clinical observation in the minutest detail. After taking careful fluoroscopic readings and studying the emptying time of the individual animal, and then resecting the sphincter of the pylorus, we have found that the emptying time is from 30 to 50 per cent. quicker than in the normal animal; that the contraction waves on the lesser and greater curvature are so shallow that they can hardly be seen. Therefore, when the sphincter of the pylorus is paralyzed, there is very little resistance met by the contents in the stomach, and the intragastric pressure produced by the tonic contraction of the cardia is sufficient to empty the stomach contents very readily through the paralyzed sphincter. We have learned both from the clinical and the animal work that the size of the peristaltic waves on the lesser and greater curvature is in direct proportion to the amount of resistance that they meet at the pyloric sphincter; for when we produce a partial obstruction at the pylorus by fascial transplant, the size of the waves is very large because they meet a great resistance. When the pyloric sphincter is cut away, the waves are hardly visible because of the little resistance that they meet at the sphincter of the pylorus.

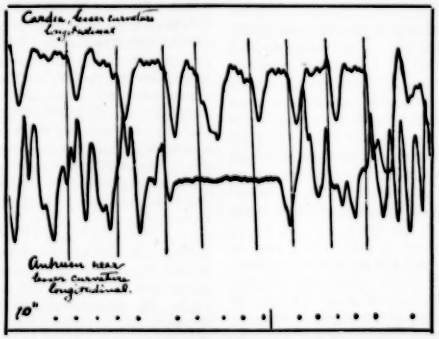


Fig. 4.—Electrograms from the cardia and antrum of a cat. The small deflections on both records are probably respiratory in origin. Note the blockage of two waves. The main deflection in the cardia's record is a positive one, suggesting that the pacemaker lay between the two electrodes placed on the lesser curvature next to the cardia.

DR. W. C. ALVAREZ, San Francisco: I fully appreciate the dangers and pitfalls Dr. Carlson points out. I worked out the method of using the electrogastrogram about two years ago, and I was so surprised at the things I saw that I practically dropped it for a year and developed a method of getting records of the actual contractions before daring to talk about the peculiar things I saw on the electrogastrograms. And since we cannot by any present known methods get records like this of the impacted stomach of a wide awake man, I feel that we must make the beginning, and make that beginning on animals. To my mind the hopeful element is this: We know that a dying heart, or a heart that has been handled too long, develops certain abnormalities of rhythm; many of those abnormalities of rhythm are found in disease, and study of them under abnormal conditions has helped in the understanding of disease. Therefore, I think that probably it will be the same way with this work.

Percentage of War Neuroses.—Analysis of the 170,000 cases discharged for disability in England showed that 20 per cent. were due to war neuroses.—May, *Mental Diseases*, 1922.

SYPHILIS OF THE MOUTH

COMMON TENDENCY OF THE MOUTH AND SKIN TO THE SAME PATHOLOGIC PROCESSES *

WILLIAM ALLEN PUSEY, M.D.
CHICAGO

There is a close relation between the tissues of the mouth and those of the skin. Their structures are very much alike, and they react to many pathologic processes in the same way. There are numerous systemic diseases which have eruptions on the oral mucous membrane as well as on the skin, and these oral eruptions are identical with those of the skin, except as they are altered by the peculiar local conditions to which they are subjected in the mouth. These facts are particularly well exemplified in syphilis. The skin and the mouth are the structures for which syphilis shows its greatest predilection, and the predilection is quite as great for the mouth as for the skin. Indeed, it is probably true that syphilis occurs with as great frequency in the mouth as on the whole surface of the skin. Its frequency in the mouth, then, would of itself make syphilis of the mouth a subject of great practical importance. When we remember in addition the peculiar danger to others of syphilis of the mouth in its early period, it becomes doubly important.

One can get most easily a clear grasp of syphilis of the mouth if he will bear in mind that its lesions are those that occur on the surface of the skin, modified only by the peculiar influences to which their occurrence in the mouth exposes them. These are chiefly: exposure to moisture and warmth, causing the lesions to be macerated; irritation or injuries from eating, drinking and biting, from irregular, rough or sharp teeth or from tartar; and secondary infections in the mouth. Peculiarity of structure of the tissues involved accounts for some variations, but these are as a rule of little account except in late lesions of the tongue.

The special influence which is always active in modifying the appearance of syphilitic lesions in the mouth, and the one that does most to change their appearance, is the maceration to which the lesions of the mouth are, of course, always subjected. This factor produces little variation in the chancre or tertiary (true gummatous) lesions, but it causes distinct alteration from their cutaneous types in the lesions of secondary syphilis in the mouth. These early syphilids of the skin are mostly dry lesions. They are covered by a horny layer, which is imperfect, it is true, but sufficient to prevent free exudation from the lesions. In the mouth, this horny layer gives way, and

* Read before the Section on Stomatology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

these lesions become the classic excoriated mucous patches.

PRIMARY SYPHILIS OF THE MOUTH

Chancre.—Of all extragenital chancres—and extragenital chancres constitute about 5 per cent. of all chancres—about 75 per cent. occur on the head; and of these that occur on the head, more than 80 per cent. occur in the mouth. Thus, about 60 per cent. of all extragenital chancres are chancres of the mouth. In Fournier's statistics, covering 1,124 extragenital chancres, 849 occurred on the head; of these, 723 occurred in the mouth. Of these 723 cases occurring in the mouth, 567 occurred on the lips (usually the lower lip), seventy-five on the tongue, sixty-nine on the tonsils, eleven on the gums, and one on the buccal mucosa. Chancres of the mouth, therefore, occur with vastly greater frequency on the lips; after that, they occur with about equal frequency on the tongue and tonsils. They are very unusual on the gums, and excessively so on the buccal mucosa. The frequency of their appearance on the lips and tongue obviously depends on the great frequency of exposure of these parts and the common occurrence of breaks here in the epithelium which allow infection. The frequency of the involvement of the tonsil is not so obvious; it probably lies in the unusual susceptibility of the tonsil to infections in general. Of course, a chancre may occur on any tissue in the mouth, as it may appear on any living human tissue, but it is a fact established by experience that chancres occur frequently on the lips, tongue and tonsils, and with great rarity in other structures of the mouth.

The chancre is most frequently a superficial erosion or ulcer of pea or bean size on an indurated base; occasionally, it is a frank ulcer of thumb-nail size or larger. It may be a dry indurated papule or nodule, or an elevated moist nodule. Very rarely, the chancre is a dry indurated nodule; usually, it is an open lesion with an indolent surface covered by a thin yellowish exudate. This can be wiped off, leaving a red weeping surface, which does not bleed freely, but has a very free serous discharge full of spirochetes. It is practically painless. Chancres are more frequently multiple on the lips, I believe, than elsewhere, but even on the lips multiple chancres are exceedingly rare.

With all of their variations in unessential details, chancres of the mouth, as elsewhere, have a few common objective features which are distinctly characteristic. A chancre always means a dense, indolent, inflammatory infiltration in the tissues at its site; and density and indolence are the essential clinical features of the lesion. Its base has a peculiar solidity. It can be grasped between the fingers as a solid button from which, because of its density, the blood is easily pressed out, leaving between the fingers a distinct disk of yellowish cartilaginous color and cartilaginous feel. It is indolent in degree of activity and in course. The reaction is so sluggish that it is practically painless, and it persists almost without change for from one or two to four or five weeks. It is this indolence in particular which is most likely to call attention to an otherwise unsuspicious chancre about the mouth. Another and peculiar characteristic of the chancre about the mouth is the extraordinary enlargement of the contiguous glands which usually accompanies it. These are painless and hard, but the degree of enlargement is much greater than with other lesions in the mouth of similar size, and also usually much greater than occurs in the adjacent glands with chancre of the genitals.

Of course, many variations may occur in the chancre, but on the whole chancres are surprisingly true to type. This fact, while it should lead to the clinical recognition of chancres, should never justify us, in the present state of our knowledge, in making a diagnosis of an initial lesion of syphilis on clinical grounds alone, or in excluding syphilis on the same grounds, in the case of any excoriation, fissure, erosion, ulcer, or similar lesion which by any possibility might be a chancre. Except when facilities for examination are unavailable, the clinical diagnosis of chancre should immediately be confirmed by examination for *Spirochaetae pallidae*. They are present in abundance in the exudate of the chancre; and their demonstration is of excessive practical importance, because the presence of syphilis can be definitely established by their demonstration in the chancre; and experience has shown that, when the disease is thus early recognized, the prospect of aborting it by immediate intelligent specific treatment is good. In the old days, it was the rule of all conservative men never to make a positive diagnosis of syphilis on the chancre alone. The diagnosis was never made except when the character of the chancre was confirmed by the typical evolution of the disease up to the appearance of secondaries. Now we can make the diagnosis on *Spirochaetae pallidae* alone, even before the disease becomes systemic, and before the Wassermann reaction becomes positive. And when we can get patients at this stage, we can cure them; it is the golden opportunity in syphilis for which every practitioner should be alert.

SECONDARY SYPHILIS OF THE MOUTH

The manifestations of early systemic syphilis in the mouth are, as I have said, exactly analogous to the secondary eruptions that occur in the skin. We have all of the manifestations from the macular erythema, through the papular and nodular eruptions, up to the ulcerative secondary lesions. Corresponding to the faint macular syphilid on the skin, we may see an eruption of dry red spots on the inner surfaces of the lips or on the mucosa of the cheeks or soft palate. This is a very rare eruption and usually of short duration. More frequently, but still rarely, we see a dry hyperemic eruption on the soft palate or in the pharynx. This is sometimes a faint spotted erythema, but is more likely to be a diffuse bright red hyperemia. It is occasionally dry, but, as a rule, the epidermis is more or less excoriated, and the picture resembles a mild degree of catarrhal pharyngitis. It differs from this, as a rule, by presenting a mottled appearance due to the individual macules whose coalescence has caused the larger area.

Mucous Patches.—Vastly more frequent than any other eruption of secondary syphilis in the mouth are the several forms of mucous patches. They are the prototypes of the secondary eruptions on the skin and, like all of the secondary eruptions in the mouth, occur with them. They have a red, but not angry, base, which is usually covered by a thin pellicle of exudate and necrotic epidermis, around whose edge a narrow border of red shows. The pellicle can be wiped off, but it is fairly adherent. The lesions do not bleed easily, but, like the chancre, they have a free exudate of serum which contains many syphilitic spirochetes. They are, as a rule, almost or quite without discomfort; they are

usually few in number, and thus they may escape even the patient's attention. It is this combination of insidious features which makes them so dangerous in the transmission of the disease; for they are highly contagious.

Mucous patches may be so superficial as to appear as small areas of necrotic epidermis, neither elevated nor depressed, surrounded by a narrow red collar. Usually, they are superficial erosions or very superficial small ulcers. Sometimes, they are deeper ulcers. Occasionally, they are elevated eroded nodules or plaques. They vary in size from that of a pin head to that of a small coin. Typically, they are round or oval, and from one-eighth to three-fourths inch (3 to 19 mm.) in diameter. They are, as a rule, multiple; and sometimes they are so numerous as to involve a large part of the surface of the mouth. The exaggerated lesions and the extensive distribution of the lesions occur only, as a rule, in careless, neglected patients.

They may occur on any part of the surface of the mouth or pharynx. They occur most frequently on the buccal mucosa, especially near the angles of the mouth, on the sides and tip of the tongue, on the under surface of the tongue, and on the floor of the mouth under the tip of the tongue.

On the surface of the tonsils, mucous patches are common, and in this location they are frequently angry, and accompanied by more reaction than is common elsewhere in the mouth. They occur here as discrete patches, either erosive or ulcerative, of the ordinary size. In some cases, they are larger than usual, or occur in numbers that coalesce into patches producing a severe ulcerative tonsillitis or pharyngitis.

Smooth Glossitis of Early Syphilis.—Mucous patches occur on the dorsum of the tongue in one form of lesion which is not included in this general description of the usual forms. This lesion is a superficial specific infiltration which produces a dry red patch. In these patches, the papillae of the tongue entirely disappear in the infiltration; the patch thus has a perfectly smooth surface, and is covered by a thin layer of glistening epidermis. The whole lesion is a smooth bright pink to red patch with a sharply defined border between it and the normal surface of the tongue. These patches are usually of finger-nail size, and several of them usually occur on the dorsum. They may coalesce and produce a smooth red tongue whose surface in front of the circumvallate papillae is, except for the extreme redness, much like that of the buccal mucosa. This is the smooth glossitis of early syphilis, and is a characteristic condition. It is quite painless.

Mucous patches are nearly always accompanied by other evidence of syphilis. They occur frequently and abundantly in early secondary syphilis, in the first six months after the chancre. At times, they will be seen when no other syphilitic eruption is to be found. But their connection with syphilis will be shown by the history or by the presence of other manifestations of syphilis; usually, by an indurated scar at the site of the chancre; or by indolent and enlarged inguinal, cubital or posterior cervical glands. When they are present, the Wassermann reaction is nearly always positive.

While they are distinctly an early lesion of syphilis, one of their dangerous characteristics is their tendency to relapse for a considerable time. They occur most frequently, and in the greatest abundance, during the first six or eight months of the disease. Even in untreated or poorly treated cases, they occur less frequently in the second year, and rarely after that. But the recurrence of the mucous patches has been recorded a surprising number of years—even eight or nine years—after infection. I confess that I have seen no such late manifestations of the lesions, and that the occurrence at these late dates is so inconsistent with the recognized course of syphilis that I, personally, am compelled to question the accuracy of the observations which attribute these lesions to infections so old.

Condylomas.—Condylomas are vegetating secondary lesions of syphilis. They are exactly analogous to the secondary macular and papular lesions, and their only peculiarity is the fungoid hyperplasia. This is due to the fact that the warmth and moisture at the orifices of the body furnish conditions so favorable that unusual overgrowth of certain infectious lesions occur at these sites. This happens not only with the lesions of syphilis but also with other inflammatory processes of indolent degree. The condylomas of syphilis, however, differ from other and similar vegetating lesions in that they are liable to be less active. The lesions form flat elevated nodules or, from coalescence, plaques, which are usually raw and covered by a dirty yellowish exudate. They are not the exaggerated exuberant granulations or the accumulate warty growths of other infections, so that their recognition can be made on their clinical features alone. They abound in spirochetes, and the clinical diagnosis in doubtful cases should be confirmed by dark-field examination. Condylomas are rare lesions about the mouth. They occur occasionally at the angles and very exceptionally in the floor of the mouth.

TERTIARY SYPHILIS OF THE MOUTH

Late syphilis of the mouth is frequent; for the disease in the tertiary stage shows as great a predilection for the mouth as does early syphilis.

Gummas.—Gummas may occur in any of the tissues of the mouth. Their sites of predilection are the tongue, especially the dorsum; the hard and soft palate; and the tonsils and walls of the pharynx. They invade the bone structures as they do the soft parts. Periosteal gummas in the mouth occur most frequently in the hard palate. They also occur, with less frequency, in the upper and lower mandibles.

Gummas in the mouth, as elsewhere, vary from small pea size tumors to tumors the size of an olive, or larger, and develop as solid painless and oval or round elevated tumors. They may undergo solution and disappear without ulceration, either spontaneously or as the result of treatment. As a rule, if a gumma is untreated, the center becomes necrotic, and an opening forms on the surface. The ulcer resulting is relatively deep, with rather irregular, precipitate borders, and with a base made up of irregular red granulations having a thin purulent discharge. When gummas occur as small nodules—pea size to hazelnut size—they are usually multiple and have a characteristic arrangement in the arc of a circle or as an archipeligo-like group. As they break down, the ulcers coalesce and form crescent-shaped ulcers or a group of small ulcers that look like a map of a group of small islands. These small group gummas are not their usual manifestation in the mouth. As a rule, in the mouth, they occur as isolated, deep, destructive oval ulcers. They are usually painless, except as a result of secondary infection. On the

tongue, they occur usually on the dorsum. On the hard palate they appear in the periosteum, and by breaking down cause often a characteristic perforation into the nose. On the soft palate, they appear as disk-shaped gummas which are liable to break down with great rapidity and cause extensive destruction, which may temporarily cause great difficulty in eating and drinking. Gummas of the tonsil are likewise liable to be rapid and destructive. The amount of destruction produced by rapidly breaking down gummas of the soft and hard palate and tonsil produce, at times, destruction which is temporarily appalling. Fortunately, a surprising amount of repair occurs in the healing of these lesions. Cases in which apparently irremedial defects are occurring may end with relatively little deformity. The posterior wall of the pharynx, as well as the posterior nares, is a frequent site of gumma. As a rule, on the posterior wall of the pharynx the lesion is relatively indolent and produces less destruction.

Interstitial Infiltrations.—The tongue, in addition to being a frequent site of gummas, is attacked even more frequently by an interstitial syphilitic infiltration, which is analogous to the sheetlike interstitial infiltrations of syphilis that occur in the viscera, and in connective tissue and muscular structures such as the aorta. In this condition we do not find circumscribed gummas but diffuse gummatous infiltrations. This interstitial syphilitic glossitis may be superficial or may extend deep into the tongue. It is not an ulcerative form of syphilis, but it is a form which is followed by scar tissue formation and sclerosis. Its clinical appearances vary with the extent, and particularly with the depth of the involvement.

Smooth Atrophy of the Tongue.—This condition is a result of interstitial glossitis. It may occur in superficial discrete patches, but it usually occurs diffusely over the entire dorsum of the tongue. Early in the course of the condition, the tongue may be red and swollen; usually, this early condition is not seen. As a rule, when the cases first come under observation, the dorsum of the tongue shows either several patches or a diffuse surface covered by smooth, glistening, dull red epidermis, the small papillae of the tongue having been destroyed in the process. With this, there is more or less superficial furrowing of the tongue. As the syphilitic infiltration is replaced by scar tissue, these furrows become deeper and the tongue is slightly distorted.

This smooth atrophy of the tongue occurs also at its base, producing a smooth even surface behind the circumvallate papillae. It occurs often without similar involvement of the tongue in front of the circumvallate papillae. It is one of the characteristic, but most frequently overlooked, lesions of syphilis.

Sclerosis of Tongue.—A deep interstitial glossitis produces a picture like that of the superficial glossitis, except that the distortion of the tongue is exaggerated. As a result of this condition, the tongue is hard and smaller from the presence of scar tissue; when sclerosis is established, the fissures are deeper, and it is nodular or lobulated, or otherwise distorted.

Leukoplakia.—Patches of leukoplakia occur on the scars of gummas, but they develop much more commonly after superficial or deep interstitial syphilitic glossitis. Superficial glossitis is probably the most frequent cause of syphilitic leukoplakia.

Syphilitic leukoplakia characteristically occurs on the dorsum of the tongue. It is likely to occur extensively over the tongue, showing in whitish patches which mottle the tongue, but between which a lesser degree of leukoplakia extends. It is usually of moderate degree until it has persisted for several years. Gradually, it may show much greater horn formation, and it then becomes a dangerous precursor of cancer. Syphilitic leukoplakia also occurs frequently on the buccal mucosa, but, except as it occurs on the tongue, I am not sure that it has any characteristics that distinguish it from nonsyphilitic leukoplakia. And nonsyphilitic leukoplakia is much more frequent than is leukoplakia due to syphilis. I wish to emphasize this fact because there is a widespread impression that leukoplakia is usually, or always, the result of syphilis. That undoubtedly is not the fact. Leukoplakia is simply a symptom. It is a manifestation of increased cornification of the epidermis, and it is the result of a subacute or chronic inflammatory reaction at the site. It thus may be produced by any sort of chronic inflammation from any source of chronic irritation. Very frequently this source is chronic irritation of external origin. Even in syphilis, leukoplakia is rarely a manifestation of the disease itself; it is so only in rare cases in which there is a proliferation of the epithelium over an area of active syphilic manifestation which has not yet disappeared. In these cases only, it is influenced by specific treatment. As a rule, in syphilis it occurs at the sites of previous active syphilitic lesions, where the mucosa has been damaged in a sclerotic process that followed the active lesions. In these cases, specific treatment is of little or no use.

Macroglossia and Macrocheilia.—As a result of diffuse syphilitic glossitis, the tongue not infrequently is reduced in size. In distinction to this, we occasionally see a hypertrophy of the tongue resulting from syphilis. This macroglossia is an elephantiasis due to lymphatic obstruction. This may be either the result of syphilitic lymphangitis or of a lymphangitis from a secondary infection occurring in open syphilids.

A similar macrocheilia occurs even more often from syphilis. In this connection, the lips, or either of them, may be moderately or enormously thickened. Both with syphilitic hypertrophy of the tongue and that of the lips, specific treatment causes improvement, but rarely does it cause entire disappearance of the enlargement.

CONGENITAL SYPHILIS

Congenital syphilis of the mouth differs in no essential feature from the acquired disease. It is very likely to produce an exaggeration of the picture. The mucous patches of congenital syphilis are liable to be abundant and more ulcerative than usual. They occur in greater abundance on the lips, particularly at the commissures, where they commonly leave pathognomonic radiating linear scars. The gummatous lesions produce all degrees of destruction of the soft and hard parts of the mouth which I have outlined as occurring in acquired syphilis.

TREATMENT OF SYPHILIS OF THE MOUTH

The treatment of syphilis of the mouth is the treatment of the disease in general. As a matter of fact, probably because of the simplicity of the structures of the mucous membrane as compared with those of the skin, the lesions of syphilis in the mouth heal with greater rapidity under specific treatment than do those

of the skin surfaces. There are no lesions of early syphilis which yield to arsphenamin with more rapidity than do chancres and mucous patches of the mouth. The late lesions of syphilis of the mouth yield promptly under specific treatment, whether arsphenamin, or mercury and the iodids, or both. For their healing, mercury and the iodids are all sufficient, although healing is somewhat more rapid when they are combined with arsphenamin. No local treatment of either early or late syphilids of the mouth is necessary beyond cleanliness and obvious rational measures. The only lesions that will not heal under specific treatment are those in which there is dead bone whose removal is necessary before cure can occur.

7 West Madison Street.

ABSTRACT OF DISCUSSION

DR. W. S. BAINBRIDGE, New York: We should keep in mind the points which Dr. Pusey emphasized and put them into practice. The one point in which I am especially interested is that syphilis may occur with many other conditions. The mouth often represents a multiplex pathology, and it is not often easy to make a diagnosis. Even the microscopic findings are not always to be depended on.

THE CAUSES OF SURGICAL FAILURE IN HYPERTHYROIDISM*

J. EARL ELSE, M.S., M.D.
AND
HARRY S. IRVINE, A.B., M.D.
Assistant Professor of Surgery and Instructor in Surgery, Respectively, University of Oregon Medical School
PORTLAND, ORE.

79
22

A review of the literature shows that from 65 to 75 per cent. of the patients operated on for exophthalmic goiter make a complete recovery. The majority of the remaining 25 to 35 per cent. are benefited; but some show no improvement, and death occurs in from 1 to 4 per cent. In the cardiovascular group of goiters, including the toxic adenomas, adenomatosis and compensatory hyperplasia, better results are obtained. During the last two and a half years, approximately 300 cases of goiter of various types have been studied. In this group have been several cases in which the patients had been previously operated on without complete relief. These cases were studied in conjunction with unoperated cases of similar types in order to determine, if possible, the causes of the incomplete results or failure. These causes have been classified thus: (1) errors in diagnosis; (2) overestimation of the patient's resistance; (3) persistent symptoms due to delayed operation; (4) recurrence of symptoms due to insufficient operation; (5) improper or insufficient after-care.

ERRORS IN DIAGNOSIS

As was pointed out by Plummer, a number of years ago, other etiologic factors, usually mild toxemias, produce a chain of symptoms similar to those of mild hyperthyroidism. When this chain of symptoms occurs in patients having nontoxic thyroid lesions, it is often very difficult or even impossible to differentiate between the lesions that may produce these symptoms and hyperthyroidism, without a determination of the basal metabolic rate. These patients complain of various nervous manifestations; tachycardia of varying degree is usually present; often there is a tremor; the patients are frequently undernourished, and have, as a rule, a poor appetite, contrasting them with the majority of patients suffering from hyperthyroidism. In this series of cases, there have been several of this group that have been previously diagnosed as hyperthyroidism and two in which the patients had been operated on. The symptoms, in the majority of cases, were due to chronic infected tonsils. There were two cases of incipient tuberculosis; one of asthenia with ptosis, and in one, the patient, a woman ten years previously, at the age of 30, had had a double oophorectomy, followed by nervous instability. Other than the nervous manifestations, and the presence of a small goiter, there was no evidence of hyperthyroidism. The basal metabolic rate was normal.

OVERESTIMATION OF THE PATIENT'S RESISTANCE

Operative procedure more radical than the resistance of the patient will stand is the principal cause of unduly severe reaction or death following operation. There is no one method by which the resistance of the patient can be accurately estimated. The basal metabolic rate and the clinical manifestations must both be considered. Disregarding either one is certain to be followed sometimes by disastrous results. The basal metabolic rate indicates more accurately the activity of the thyroid gland, while the clinical manifestations indicate the resistance of the patient to the thyroxin absorbed.

Hyperplastic or exophthalmic goiter is a disease that occurs in cycles, each cycle consisting of four stages: (1) the stage of development; (2) the stage of maximum intensity; (3) the stage of retrogression, and (4) the stage of remission. In the first stage, the basal metabolic rate increases more rapidly than do the symptoms, and is higher than the symptoms would indicate. In the second stage, the basal metabolic rate and the symptoms have reached their height, and run about parallel. In the third stage, there is improvement both in the basal metabolic rate and in the symptoms; but the basal metabolic rate drops more rapidly than the symptoms, and is lower than the symptoms would indicate. During the first stage, the basal metabolic rate is of greater importance than the symptoms in determining the operative procedure. Either a rapidly rising rate or a high rate is a danger signal. During the second stage, the basal metabolic rate and the symptoms are about equal in importance. Except in mild cases, the radical operation should never be performed in this stage. Ligation of the superior thyroid poles brings on the third stage. In this stage, the metabolic rate is lower than the symptoms would indicate, and the symptoms are the more accurate guide. As a rule, patients do well when operated on in the third stage.

In the stage of remission, the basal metabolic rate is usually about normal. The presence and severity of the symptoms depend on the severity of the cycle or cycles through which the patient has passed and on the damage done by the thyroxin. In this stage, operation is usually safe; yet in some cases, in which there have been severe permanent lesions produced by the thyroxin, especially in the heart muscle, it is fraught with danger. If the basal metabolic rate is high, the radical operation should not be performed without preliminary ligation, even though the symptoms are mild; and, conversely, if the symptoms are severe, the radical operation should never be done without preliminary

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

ligation of the superior thyroid arteries, even if the basal metabolic rate is low. It is often preferable to make the ligations one at a time. This procedure reduces the mortality rate to that of the ordinary abdominal operation. In this series of cases, there were no operative deaths. We attribute this to strict observance of the indications as shown by basal metabolic studies in conjunction with the symptoms.

PERSISTENT SYMPTOMS DUE TO DELAYED OPERATION

In cases presenting this group of etiologic factors are included those in which the patients have been previously operated on, and in which the activity of the thyroid gland is normal or subnormal, as shown by the basal metabolic rate, yet the patients have peristent symptoms due to permanent lesions produced by the thyroxin previous to the operation. With one exception, each of these patients gave a history covering a considerable period of time. In that one exception, the patient was having a very severe primary attack, and had been sick several weeks when seen. We have seen no patients who were operated on early in the primary attack who did not completely recover; so we have regarded persistent symptoms as due to delayed operation. Several of these patients reported previous medical treatment, with what was thought at the time to be beneficial results. In the light of the subsequent history, we believe that the medical treatment merely carried the patient over the height of the disease into the stage of remission. Medical treatment will not always carry a patient over the stage of maximum intensity. One patient was seen who had been previously treated medically for three months by a very competent physician. Her basal metabolic rate was 95 per cent. above the average and her condition not good for even a ligation, which had to be done at once, as she was getting progressively worse. The first ligation was followed by a very severe reaction, the second by a moderate reaction, and the operation by very little.

The most serious, persistent symptoms were those due to cardiac injury. Tachycardia was frequently present. Irregularity of the heart beat was less common. A mitral systolic mumur was present in one case. In two cases, fluoroscopic examination revealed that the heart was increased in size. Albert Kocher first called attention to the frequency of cardiac symptoms with exophthalmic goiter. Fahr, in 1916, showed that there was an interstitial myocarditis consisting of an accumulation of round cells between the muscle fibers, and degenerative changes, fragmentation, and destruction of muscle fibers in the neighborhood of the small vessels. Goodpasture regards this condition as a toxic myocarditis. When an extensive myocarditis of this type has once been produced, even though the patient is cured of the goiter, the heart remains an impaired heart.

One patient who gave a history of repeated severe attacks of hyperplastic goiter over a period of fifteen years had a marked hypertrophied and dilated heart, with very rapid, irregular action and pronounced mitral regurgitation. After a period of rest, one superior pole was ligated, and later the other. Following the second ligation, the patient showed marked improvement but, about one month later, died suddenly, following an attack of severe pain in the region of the heart. We regarded this as being a cardiac death due to delayed operation.

Exophthalmos improves following operation, but in the more severe cases does not completely disappear. Tremor persists sometimes. A distressing persistent feature in two cases was that of nervous instability. One of the patients had had attacks of hyperthyroidism over a period of years, and the other was seen during a very acute attack. She was mentally deranged at times. Both patients were operated on after preliminary ligation, and both showed marked improvement. The patient with the acute attack gave a history of having previously had a mild disposition; but, since the attack, she had been irritable and quarrelsome. The other patient was quite irritable.

RECURRENCE OF SYMPTOMS DUE TO INSUFFICIENT OPERATION

Recurrences from four different causes were noted:

1. *Simple Ligation.*—The ligation of the superior thyroid pole does four things: (*a*) shuts off the arterial supply; (*b*) prevents the return of venous blood through the superior thyroid vein; (*c*) stops impulses coming over the nerve, and (*d*) blocks the lymphatics that accompany the superior thyroid vessels. The first two are most important, as the ligation of the superior thyroid artery temporarily diminishes or entirely stops the function of a considerable portion of the lobe, and the obstruction to the vein delays the development of the collateral circulation. Eventually, function is restored; and when the recurrence takes place, the condition is more serious, because the blood supply, coming through an anastomosis within the gland, cannot be shut off from the superior pole.

Ligation of the inferior thyroid arteries should never be performed because of the danger of tetany, the parathyroids being supplied by branches of this artery. It has been our custom, in the severe cases, to ligate one pole, observe the metabolic rate until it has dropped as low as it will go, then ligate the other pole, follow the rate as it drops, until it reaches its level, and then remove the gland. In some cases, the rate will begin to rise after eight or ten weeks. It is always necessary to caution the patient before the ligation that, although there will be marked improvement, recurrence is the rule; and, the superior poles having been ligated, it is much more difficult to carry the patient over the crisis to a point where the radical operation is safe, if he waits until the disease again becomes severe.

2. *Lobectomy.*—One patient, who had had a single lobe removed several years before, was seen in an acute attack of hyperthyroidism.

3. *Insufficient, Double, Partial Lobectomy.*—One patient was seen in which there was a recurrence in one lobe.

4. *Removal of Only a Part of the Toxic Adenomas Present.*—Two cases were seen that come under this group. One of the patients weighed 286 pounds (130 kg.) and had a metabolic rate 54 per cent. above the average. She had a large adenoma in the isthmus and a smaller one in the left lobe. We regarded this patient as a poor surgical risk; and, as it has been our experience that ligation of the superior thyroid arteries in adenomas, especially in the isthmus, is of practically no value, we enucleated the adenoma in the isthmus without disturbing the rest of the gland. The patient made a satisfactory recovery, and has been in fairly good physical condition since for one of her weight; yet her basal metabolic rate is still 37 per cent. above the average.

As stated above, the small adenoma was deliberately left because this patient was a poor risk; yet a study of this case convinces us that small adenomas could be easily overlooked, and probably are, and later, developing, produce a recurrence of the symptoms. The other patient gave a history of having been operated on for an exophthalmic goiter eleven years before. She had recently noticed an enlargement in her neck, and showed the evidences of hyperthyroidism. The basal metabolic rate was 17 per cent. above the average. On examination, an adenoma measuring 5 cm. in diameter was found in the isthmus of the gland. Pathologic examination of the adenoma after removal showed it to be of the mixed type. In this last case, the adenoma may not have been present at the time of the operation, developing later. In the first case, we are certain of its having been present.

IMPROPER OR INSUFFICIENT AFTER-CARE

Ochsner states that the most important point in the surgical consideration of hyperthyroidism is the after-treatment. In severe cases of hyperthyroidism, the patients are irritable, excitable and sometimes mentally deranged. The heart often undergoes hypertrophy and dilatation, and myocardial degeneration may be present. These patients are often very much undernourished. The removal of the major portion of the thyroid gland reduces the thyroxin supplied to the patient to normal amounts; but, following the operation, the damage previously produced by the oversecretion of thyroxin must be repaired, if possible. It is easy to bring the patient back to normal weight, because the ravenous appetite continues; but it is not so easy to develop the injured heart muscle or to repair the disordered nervous state. This may take weeks or months of careful hospital or sanatorium treatment. If this is not done, the patient may come to an early death, because of the cardiac lesion; or a neurotic state may develop that will make life miserable for the patient and relatives. Some patients develop mild hypothyroidism shortly after operation. In these cases, desiccated thyroid should be administered until the gland recovers from the trauma of the operation. Carefully following up cases of hyperthyroidism following operation will greatly reduce the morbidity.

CONCLUSIONS

1. The determination of the basal metabolic rate is very important in differentiating between mild toxemias in the presence of nontoxic goiters and mild hyperthyroidism.

2. Deaths or severe reactions following operation are for the most part due to avoidable errors.

3. Incomplete results following operation on patients with hyperthyroidism are due to delayed operation, insufficient operation, or insufficient after-care.

4. Patients with hyperthyroidism must be operated on early if permanent lesions are to be prevented.

5. Medical treatment will usually carry a patient over the crisis into the stage of remission, but beyond its use in preparing patients in a precarious condition for operation, it has no place in the treatment of toxic goiter. Hyperthyroidism is a surgical disease.

6. After-treatment is as important as the operation. A surgeon's responsibility does not end until the patient is in the best possible physical condition.

7. A surgeon is not justified in operating in, or treating, a case of hyperthyroidism without frequent determinations of the basal metabolic rate.

THE DESPERATE RISK GOITER*

MARTIN B. TINKER, M.D.
ITHACA, N. Y.

During the last few years the treatment of the average case of goiter has been quite satisfactorily standardized as the result of the management of many thousands of cases, mostly in the hands of relatively few surgeons. However, every one interested in these cases, no matter how experienced he may be, occasionally faces conditions involving the thyroid alone, or complicated with other pathologic conditions, which are of sufficient gravity to tax his judgment to the utmost. A too high mortality, even in desperate risk cases, brings discredit on surgery and influences many, who might safely obtain relief, not to have a timely operation. On the other hand, careful study and elimination of some cases, with greater experience and improvement in methods of dealing with these cases, has made it possible each year to extend the range of operability to other cases which at first sight were apparently regarded as hopeless. Every observer brings to the study of his problem an individuality in judgment and method which should be of help in solving the difficult problems which concern us all. This report is based on 1,000 cases selected from a series of 1,318 records of recent cases, under observation since May 31, 1914, and studied in detail up to May 31, 1921, representing, for the most part, five years' work with a deduction of two years, during service in the United States Army.

DETERMINATION OF DESPERATE RISK CASES

What cases should be considered as desperate risks? It seems to me that any case in which the patient is apparently faced with almost certain death unless relieved within a relatively short time might be so classed. We have records of forty-two patients that have died without operation either while under observation in the hospital or at their homes. The causes of death in these cases that have come under my observation may be grouped as follows: hyperthyroidism with extreme toxemia; hyperthyroidism in association with diabetes; goiter with extremely high blood pressure; goiter causing death by obstruction to breathing, and thyroid malignancy.

Three questions especially concern us with regard to each of these five groups of cases:

1. What are the indications of desperate risk to life?
2. How may these cases be most safely managed?
3. What results, both immediate and permanent, may be expected?

In my experience with the hyperthyroid cases, those patients with obstinate gastro-intestinal symptoms, very high blood pressure and myocardial insufficiency have seemed especially desperate risks.

When nausea and vomiting or diarrhea have apparently resulted from thyroid toxemia alone, uninfluenced by diet, medication or other causes, and have persisted in spite of treatment, the patients, without exception, have died. Fortunately, these cases are relatively rare; but at least four instances have come under my observation. Early experience convinced me of the gravity of gastro-intestinal symptoms, and I have not operated in any such case for ten years.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

Hypertension in combination with hyperthyroidism has also, in my experience, proved of decided gravity. For some time the results were so discouraging that I refused to take patients for operation with a blood pressure of 200 or over; but within the last two years we have taken fourteen such patients, most of whom have had preliminary treatment under the direction of the professor of dietetics of the department of home economics, Cornell University. The essentials have been salt-free, low protein diet, frequent saline purges, attention to elimination generally and rest in bed. These patients have improved so satisfactorily that operation has seemed justified, and the results thus far promise well. We have not considered as suitable for operation any patient whose blood pressure has not dropped at least thirty points, nor have we operated on any patient with a blood pressure of more than 190, and generally the pressure has dropped to 170, or lower. These patients, we believe, are most safely operated on under local anesthesia. Of course, they must give life-long attention to their habits of living, and post-operative supervision involving a good deal of correspondence is usually essential in order to get the patients to persevere with general health measures. In some instances the blood pressure has dropped to 170, or lower, under preliminary treatment, and, in a number of instances, to normal, following thyroidectomy. There has been no immediate mortality. But not all of these patients do well, and, up to the present, we have been unable to select the ones who will show permanent improvement from those who will not. Several of our patients are living, but are not so well as they should be, and one died of apoplexy several months after thyroidectomy.

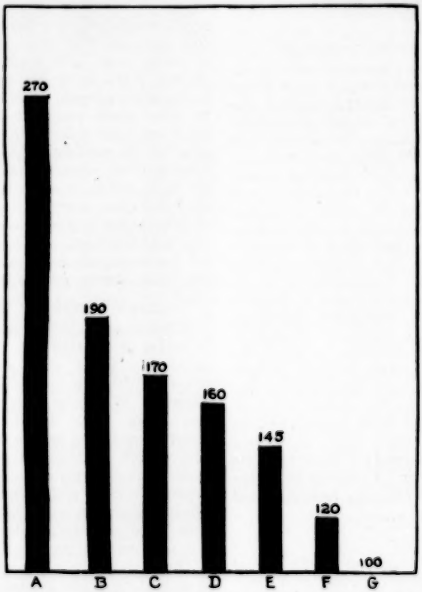


Chart 1.—Blood pressure in toxic goiter: *A*, upper level at which patients have been accepted for treatment; *B*, upper level following preliminary treatment; *C*, average after preliminary treatment; *D*, relatively safe level; *E*, average after thyroidectomy; *F*, low normal; *G*, normal.

Myocardial insufficiency, whether from poisoning of heart muscle or because of weakening from long continued tachycardia, also puts some patients in the desperate risk class. On first observation these patients, with their weak, rapid, irregular and intermittent heart action, their general muscular weakness, shortness of breath and edema, look most unpromising as to both immediate and permanent results. The persistent use of digitalis, pushed, regardless of dose, until results have been obtained, clears up the auricular fibrillation in many cases, and, with general care, brings such improvement that most of them become good operative risks. The pulse deficiency, which can be readily charted by my intelligent nurse with a little instruction, we have found a helpful index to the gravity of the situation. A large proportion of these patients with gastro-intestinal disturbances, high blood pressure and myocardial insufficiency are best sent back to their home physicians for a considerable part of their preliminary treatment. Cooperation on the part of the attending physician is absolutely essential in such cases. Many have not had much experience in dealing with thyroid cases, and it is necessary that the consultant should have clearly in his own mind what he wishes the home physician to accomplish, and to give specific instructions to both physician and patient. Reports as to the patient's progress at frequent intervals are essential, for it is difficult for them to appreciate the importance of the long, tedious, modified rest cure necessary to build up the crippled, dilated heart, and, without constant encouragement, many will give up the fight.

Among the cases of hyperthyroidism are many patients without gastro-intestinal symptoms, extreme hypertension or pulse deficiency that directs attention to the gravity of their condition, but who, because of extreme toxemias, are in desperate condition. In these cases the extreme unrest, tremor, insomnia, emaciation, dyspnea, edema and very rapid heart—most, or all, of these symptoms—are sufficient indication of the gravity of the condition. Of course, the laboratory tests are used as a routine and frequently give us some help, particularly the differential blood count and basal metabolism estimation. Many years ago Kocher called attention to relative lymphocytosis as an index of thyroid toxicity. Cabot mentioned the high percentage of lymphocytes with exophthalmic goiter, and experience indicates that this test has more significance than is usually credited to it. Patients in extremely bad condition sometimes do not have sufficient vitality to show any blood reaction. This is as true as in patients with general peritonitis whose leukocyte count falls as death approaches. However, taking metabolic rate, lymphocytes and tachycardia in any doubtful case, if any two out of three are favorable, we have not found the risk too bad, while if two out of three are very high the outcome is doubtful. In order to secure uniform conditions the blood is taken after twelve hours' fasting, at the time the patients are sent for metabolism determination, the lymphocytes being influenced, as is the metabolic rate, by taking food.

MANAGEMENT OF DESPERATE RISK CASES

When the patient's condition justifies intervention, preliminary ligation is usually all that can be performed safely. Almost without exception, those who make good recoveries following ligations improve still further with a prolonged rest cure and do well after excision. In extremely toxic cases in which the patients come to operation wide-awake and apprehensive, in spite of the preliminary administration of morphin and scopolamin, I believe that it is best to eliminate the psychic element by the administration of light gas and oxygen anesthesia, although it is the local anesthesia that relieves the pain. The many-stage operation (stopping at any time that there is doubt whether the operation can be safely completed and packing the wound with gauze) is not the ideal method; but it saves the lives of some patients who otherwise would not recover. This method of dealing with desperate cases I reported at the Los Angeles session, eleven years ago; and while, with suitable preliminary treatment I now use it infrequently, there can be no question of its value in some cases, especially when I have failed before operation to estimate the gravity of the case.

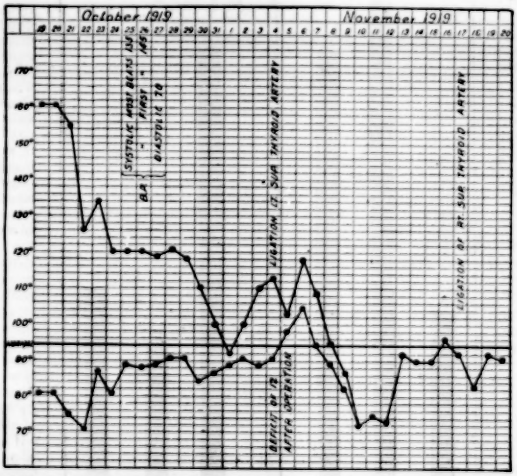


Chart 2.—Rapid improvement in a patient with a deficit in pulse rate of 80. Operation is not usually advisable until the deficit disappears: lower line, radial pulse; upper line, heart rate (by stethoscope).

Some will ask why we do not use the roentgen ray or radium. In the first place, we surgeons not only see the failures from these and other measures of treatment, but we see patients that are actually worse or badly burned, although treated by supposedly experienced operators. In the second place, I do not believe dosage can be accurately enough controlled to avert myxedema. In the third place, having lived long enough to see the passing of various serums, injections and other cures in the hands of good men, I am willing to await permanent results. Thus far, since Kocher's series of the early nineties, no method but surgery has stood the test of time.

Obstruction to Respiration.—The possible dangers of difficult breathing are shown by our records of six patients that have choked to death without even consulting a surgeon. At least an equal number whom we have operated on seemed doomed to die in the same way unless relieved; for two were referred by family physicians who stated that they had not expected to see the patients live through attacks of choking which they had witnessed. Three had not been able to breathe lying down, but had slept partly sitting up for some months. One nearly choked to death in the hospital while waiting for operation. With this experience in mind it does not seem superfluous to urge early intervention for all patients with obstructive symptoms. The history of the case is usually all that is necessary to indicate what is needed, and the roentgen ray may help to show the location and best method of attack. Most of the obstructive goiters are more or less deeply intrathoracic, crowding the structures within the bony ring formed by the vertebra, the ribs and the sternum, so that there is little room to work, and I have found local anesthesia almost indispensable for their safe removal. Even a light gas analgesia has greatly embarrassed the breathing in some of our cases, besides materially increasing the hemorrhage, as any general anesthetic always does. Fortunately, the vessels find their main trunk in the neck, as embryologically the thyroid originates as an outpocketing from the esophagus, and, in most instances, even the deeply located growths can be dragged up and out without tearing off the vessels. It seems surprising that in these enlightened days so many goiters should be allowed to reach the size at which serious obstructive symptoms develop.

Glycosuria.— This condition, associated with hyperthyroidism, makes a combination, the gravity of which seems entirely out of proportion to that of either condition alone. Even a small or transient percentage of sugar in the urine and blood puts many patients in the desperate risk class. Two of these patients have died in the hospital within a year, without surgical intervention and with every effort to improve their condition. We try to keep these patients under skilled medical care until they remain sugar free for several weeks, but the anticipation of surgery has precipitated acute thyroidism in some apparently favorable cases. In case it is possible to get the patients sugar free by careful attention to diet, they do relatively well after thyroidectomy, and frequently remain sugar free without very strict diet.

Malignancy of the Thyroid.—It is scarcely necessary to emphasize the desperate situation of these patients; yet the statement which has been made by a good authority that any case far enough advanced to enable a diagnosis to be made before operation is hopeless, I believe, should be revised. Crile's decompression case, several unpublished personal reports to me and my own experience demonstrate that, even when there is extensive involvement outside the gland capsule, the patients may remain well after operation for a long time. Most

of these patients have been treated postoperatively with radium or roentgen ray. Two of my patients have remained well; one eight years, one more than ten years, following the excision of extensive malignant processes involving not only the thyroid but also the great vessel sheath, trachea and larynx. In one of these cases, previously reported elsewhere, the growth took its original form from a branchial cleft remnant. Both patients received postoperative radium treatment by Dr. Howard A. Kelly. The risk to life is great not only because of the character of the growth but also because of great vascularity in certain instances. I myself have never encountered greater difficulty in controlling hemorrhage than in certain of these cases of malignancy of the thyroid. The results are far from discouraging, however. Of ten cases with evident malignancy, three were evidently inoperable and the patients died within a few weeks; five lived to return home, but died a few weeks or months after operation (two of these also received postoperative radium treatment); only two (20 per cent.) are living eight or more years after operation. The relatively frequent cases in which malignancy is found by pathologic examination after operation are not included, as the difficulty of operation and chances of recurrence are not great.

101 South Aurora Street.

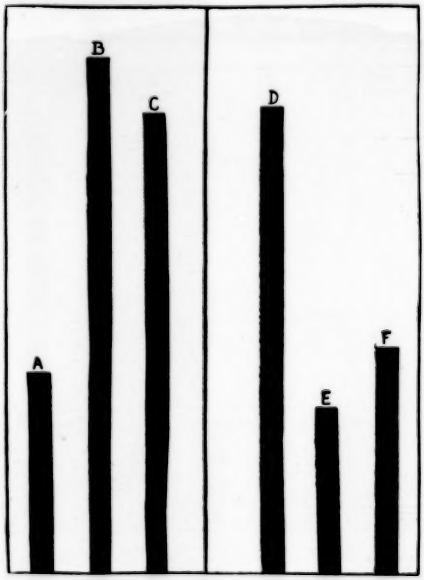


Chart 3.—Relation of apex beat, metabolic rate and lymphocyte count: Case 1, *A*, lymphocyte count; *B*, metabolic rate; *C*, apex beat: Case 2, *D*, lymphocyte count; *E*, metabolic rate; *F*, apex beat. Base line: lymphocytes, 20; metabolic rate, 100, and apex beat, 80; upper line, lymphocytes, 50; metabolic rate, 200; apex beat, 200. Two out of three laboratory tests low are favorable for operation.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. ELSE AND IRVINE, AND TINKER

DR. GEORGE W. CRILE, Cleveland: If I am correct in my understanding, Dr. Tinker means that the diagnosis of hyperthyroidism is an indication for operation; that the earlier the patient comes to operation, the better the result will be; that the patient should be relieved of all the things that produce increased metabolism; and that the patient should be followed through, as particularly emphasized by Dr. Else. I feel that almost any patient may endure the operation, provided the operator has a variety of operations to offer, fitting to his patient the type and degree of operation that he can stand safely. The first point to consider is the preparation for the operation. It is necessary to restore the internal respiration of mass tissues of the body by giving large amounts of water, 2,000 or 3,000 c.c. or more in twenty-four hours, by Bartlett's method. If the patient is vomiting, the amount of saline should be increased to 5,000, 6,000 or 7,000 c.c., to overcome the intracellular acidosis, which is the most common cause of so-called acute crises. If the myocardium has failed, or the legs are swollen, or there is ascites, we give 2 c.c. of tincture of digitalis, every four hours, until ten doses are given. If the patient is very ill, we add a blood transfusion, if for no other reason than to increase the internal respiration—to increase oxidation within the cells. Since the introduction of these methods, the average stay in the hospital before thyroidectomy has been three and one-half days. No rules can be laid down for operative management. There are principles, but no rules. We are doing thyroidectomies more often in bad risks under analgesia, in the patient's room. If the risk is bad, we stop the operation at a certain point, dress the wound with flavine gauze, and complete the operation the next morning if conditions are favorable. When a bilateral partial thyroidectomy is performed, the wound is left open and dressed the next day. The wound should be left open in bad risks because the absorption of wound secretion produces septic wound fever, which may elevate the temperature 6 or 7 degrees in a hypersensitized patient. The postoperative period is also important. Patients rarely show any marked reaction requiring any considerable treatment, if the preliminary steps mentioned are made properly. Should the temperature require controlling, the patient is packed in ice. If we are a little uncertain about the patient's course after operation, or if the risk is bad and the patient is not doing well, we make blood transfusions and give large quantities of water, repeating the preliminary preparation for the operation in order to control and maintain the internal respiration. Exophthalmic goiter is becoming more and more a surgical disease. The analogy to acute appendicitis is very good. It is wrong to delay operation. The time to remove the gland is on diagnosis, when the heart and nervous system are intact. As essential as the removal of the gland is the attention of a cooperative physician who will carry the patient through the postoperative period to a complete restoration.

DR. WALTER M. BOOTHBY, Rochester, Minn.: In the metabolism laboratory of the Mayo Clinic, approximately 25,000 basal metabolic rate determinations have been made on more than 8,000 persons. Of 2,332 patients on whom the final diagnosis was exophthalmic goiter, 94 per cent. had basal metabolic rates about + 20 per cent.; 5 per cent. had rates between + 11 and + 20 per cent., and 1 per cent. had rates within the normal limits of — 10 and + 10 per cent.; approximately one half of the latter group were operated on under the diagnosis of exophthalmic goiter in a stage of remission with the pathologic findings of diffuse parenchymatous hypertrophy, while the remainder were considered as probably belonging to the same group, but the diagnosis was not sufficiently certain to justify operation. Of 1,425 patients with the diagnosis of adenoma with hyperthyroidism, 68 per cent. had basal metabolic rates above + 20 per cent. and 32 per cent. had rates between + 11 and + 20 per cent. Of 1,111 patients with adenoma without hyperthyroidism, the basal metabolic rates in all were within the normal limits of + 10 and — 10 per cent. The value of the basal metabolic rate in the determination of hyperthyroidism due to either exoph-

thalmic or adenomatous goiter is best illustrated by the determinations made on 2,417 persons having all sorts of diseases other than thyroid disease; of these patients, 3 per cent. had basal metabolic rates above + 20 per cent.; 3 per cent. had rates between + 16 and + 20 per cent.; 8 per cent. had rates between + 11 and + 15 per cent.; 9 per cent. had rates below — 10 per cent.; while 77 per cent. had normal rates between + 10 and — 10 per cent., and 90 per cent. had rates between + 15 and — 15 per cent. It is obvious that the basal metabolism is fully as accurate as any, and of greater accuracy than most other laboratory procedures in use at the present time as an aid in general diagnosis; it has apparently about the same value for hyperthyroid conditions as the Wassermann reaction has for syphilis. The present lack of confidence by surgeons in the value of the basal metabolic rate is due largely to the fact that, generally speaking, the tests have not been carried out with sufficient care and accuracy as to render a high percentage correct.

DR. FRANK H. LAHEY, Boston: We have been very much disturbed in the past by cardiac complications and have derived a great deal of comfort and considerable knowledge by the association of a cardiologist. We were in the beginning very doubtful as to the question of operation in cases of auricular fibrillation, but have found that this group of cases when thoroughly digitalized are on the whole very good risks. Furthermore, Dr. Hamilton, who has had charge of the cardiology in connection with these cases at Deaconess Hospital, has found that more than 30 per cent. of the patients having auricular fibrillation with thyroid diseases when digitalized and operated on never had fibrillation again. The matter of glycosuria in connection with thyroid disease is interesting. It undoubtedly does increase the risk of operation. We turn over all diabetic cases to Dr. Joslin and leave the question of operation to him, as far as the diabetes goes. The intrathoracic goiter question, I believe, is becoming prominent and rightly so, because there are doubtless a great number of intrathoracic goiters which are unrecognized. We have twice had occasion to resect the upper part of the sternum, once for an intrathoracic goiter, so large that it could not be delivered, and the other time for a superior mediastinal tumor. This is an operative measure which those who are dealing with deep lying intrathoracic growths should have in mind. The danger point with these cases is during delivery of the gland. While it is being delivered through the superior thoracic strait, the patient must not breathe. The danger of prolonging this period can be overcome by thoracic decompression. By resecting the upper part of the sternum the upper strait can be widened, so that this obstruction does not occur. I think that almost every one has come to accept ligation. We believe that ligation should be and really is a major surgical operation. I believe it is often considered too lightly. It is possible to get into all kinds of difficulties with the superior pole ligation and ever so much more with inferior thyroid artery ligation. The incision should be sufficiently wide to insure that the blood supply is completely shut off, together with the sympathetic nerve which comes down from the superior cervical sympathetic ganglion. Dr. Cannon has shown beyond question that innervation of the gland comes from the superior sympathetic ganglion, and there is no doubt that ligation does more than interrupt the blood supply. These have two things which make it valuable: for one thing, it gives certain prognostic evidence as to how patients are going to stand the operation. If they stand the ligation or two ligations, and have maintained a relatively level pulse rate during these procedures, it is probable that they will withstand the later operations. It is also certain that they do acquire a psychic tolerance to operation. The multiple stage operation is a life-saving operation, so far as surgical operation goes in thyroid disease. An important thing to do is to make the anesthetist as capable of interpreting the state of the patient as is the surgeon, since, after the operation is started, he has the question of condition entirely in his hands. At each one of these stages, when each step is completed, we stop and decide whether the patient can be carried through the next step; if not, we stop, and if there is any doubt, we do not approach the higher step, but send the patient back to bed and conduct further operative procedures later.

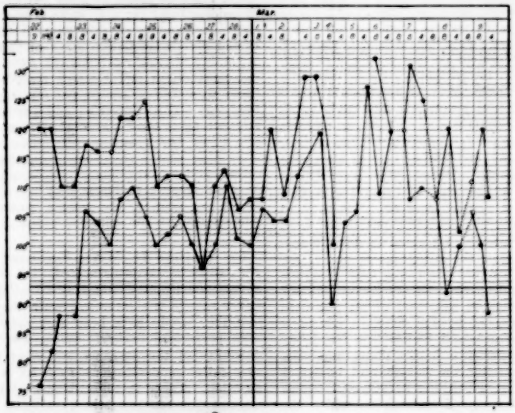


Chart 4.—Deficit chart, showing great irregularity in heart's action. The deficit and irregularity eventually disappeared under preliminary treatment and the patient made a satisfactory recovery following ligations.

DR. W. W. GRANT, Denver: Percentages and statistics are always conclusive to the man who does not know anything about the subject, and they are often confusing, as well as instructive, to the one who thinks he knows something about it. After all, it comes to one proposition. Dr. Crile has well said that the judgment of the surgeon must prevail. In reference to these cases of unusual risk, I may relate two recent experiences — one a case of hyperthyroidism and the other a large adenoma of long standing. The former patient, the wife of a doctor, had lost 56 pounds in sixty days from hyperthyroidism. Patients of this kind are very dangerous risks and, as a rule, unless you put them to bed, keep them quiet long enough to regulate heart action, promote nutrition and stabilize the nervous system, they will die under a radical operation. This patient was operated on after being kept in bed three or four weeks. She had a stormy convalescence, but had one thing which has not been stressed sufficiently—that is, trouble in phonation, even before operation, which lasted for one year after operation. She is today in splendid health and her voice is normal. Whether the recurrent laryngeal nerve was damaged I do not know, but these patients generally, but gradually, recover. This difficulty has been encountered by many good surgeons. The other patient, a woman, aged 60, had been in bed six weeks. She had suffered more than thirty-five years from goiter. She was very much emaciated and was kept in bed ten days before her heart was all right; but she was also suffering from toxic conditions and severe pains in the chest and legs. In operating, it was noticeable that compression or tension in mass, in manipulation of the solid tumor, produced disturbances of breathing and phonation before ligation of a single vessel. When the poles of the gland were lifted up from between trachea and esophagus, the patient breathed badly, and on relaxation the breathing became normal. After a week she began to improve rapidly in voice, strength, and freedom from pain; and she made a satisfactory recovery.

DR. WILLARD BARTLETT, St. Louis: The most important point brought out is in reference to the fragmentary operation. There is nothing new about it, but I want to clinch that about a man having at his disposal a number of procedures and not simply having a given method for thyroidectomy. Yesterday, we dismissed from the hospital a woman who came there a year ago in as bad a condition as we ever see exophthalmic goiter patients who get well. That woman, I think, had seven different surgical attacks before she was discharged practically well, as well as such a patient ever is. The operations were: 1. Ligation of one superior thyroid group of vessels at one time, in bed. 2. Then, at the second ligation, we entered thyroid tissue and got what always occurs when thyroid tissue is stirred up, a real reaction. We left the wound open and packed it with a little rubber strip. 3. A third attack was made with gas, with the patient in bed; we got enough anesthesia to prepare the field. Her pulse rate increased and she became so uncontrollable even under gas that we had to refrain. 4. A few days later it was possible to raise the skin flaps and pull the sternomastoid muscle back as we do in making one-sided attacks. 5. At the fifth attack, half of the thyroid was gotten out, the wound being left wide open. 6. The sixth attack was made in the operating room, because the patient was then considered a splendid risk. On the opposite side, the same operation was done as on the first side, skin flaps made up and down, sternomastoid pulled back and ribbons split; then the lobe was removed. 7. The seventh attack consisted of putting a couple of clips on the skin. Two days later, the patient went home in really first-class condition, after seven surgical operations; which theoretically is pretty bad, and practically absolutely ideal.

DR. JOHN J. GILBRIDE, Philadelphia: Bedfast patients suffering from chronic disease are practically always poor surgical risks. Dr. Crile and Dr. Tinker told us about the patients that should be avoided. Some years ago, I was called to the western part of our state to operate in a case of exophthalmic goiter in a woman, aged 60. I refused to operate. The family and the two attending physicians were very much disappointed. However, I yielded to their importunities and consented to ligate the structures of one of the poles of the thyroid. The psychic effect was such that this woman died while we were preparing for the operation. My own experience does not coincide with that of the Japanese physicians in Vienna, as quoted by Dr. Else, in which, it was stated, the superior parathyroid bodies are frequently absent. In an extensive experience in the dissecting room and in making examinations for the parathyroid bodies, I have seen many instances in which the parathyroid bodies were misplaced, but I never saw a cadaver in which the parathyroids were absent.

DR. HARRY G. SLOAN, Cleveland: There is one point I would like to stress in regard to recurrences following operation for exophthalmic goiter. Recently, after two thirds of thyroid substance had been removed, we have seen the gland hypertrophy right under our eyes in the next three or four months. The explanation is that the original match that has set the powder going is still lighted. In two cases there were chronically infected tonsils. The hypertrophy ceased, then regressed, on taking out the tonsils under local anesthesia. The third patient had an infected sinus that escaped our attention. The head seems to be the principal focus of chronic infection influencing the thyroid. In cases of hypertrophy, before we dismiss patients, we are always very anxious to see that any chronic focus of infection is eliminated.

DR. W. D. HAGGARD, Nashville, Tenn.: The discussion has brought out the very great frequency with which ligations have to be done. In our experience, two out of three thyroids have to be ligated before the radical operation can be done. I do not like Dr. Bartlett's word "attack." I think that the less we "attack" these patients the better. We are indebted to Dr. Crile for teaching us how to operate with infinite care and dexterity. Let us try not to operate in these bad cases under local anesthesia. We must make distinction between frank exophthalmic goiter and adenomas. We have not put it clearly to the profession that hyperthyroidism is a very insidious and very deadly disease that should be recognized as a surgical malady and treated as such from the beginning. As we have not been able to get that satisfactorily before the profession, we have not been able to make them realize the significance of toxic adenoma. The patient has had twelve or fourteen years of toxemia. On her quest for health, somebody gives iodin and that adds fuel to the flame; and the mortality is a little higher than from exophthalmic goiter. Roentgen ray and radium are helpful in preparation, but I do not believe they cure or are debatable as valued remedies. I believe in the splendid work Dr. Mayo has done in performing graduated operations. It ought to make us mindful of the adage "Be ye wise as serpents and harmless as doves."

DR. JOHN B. HAEBERLIN, Chicago: The crux of the whole situation is early diagnosis. The longer we wait before operating the higher the mortality climbs. The borderline cases are very important ones to recognize, and here we make use of a number of reactions—the basal metabolism test, the Goetsch reaction, and the Kottmann test. If we can find a reaction that has value in detecting these early borderline cases, it will be a great find. Petersen says that the Kottmann reaction failed in three out of seventy cases of hyperthyroidism. So there is some element of value in that reaction. In January of this year, at our staff meeting, I presented eleven borderline cases of probable thyrotoxicosis, or beginning thyroid involvement. On these eleven cases we did metabolism and Goetsch tests and found that four of them were not cases of genuine thyrotoxicosis. Of these four, one was an infection and one an incipient tuberculosis, and two cases were classified as neuroses. All of the borderline cases had symptoms of beginning thyrotoxicosis. One more point that is really important is the prevention of simple colloid goiter in the young adolescent, or schoolchildren. It is of great import to know that we can prevent probably 90 or 95 per cent. of the simple goiters that develop during adolescence by the administration of sodium iodid twice a year.

DR. CHARLES H. MAYO, Rochester, Minn.: I fully agree with what has been presented. Dr. Crile called attention to a very important point: that all of the bad cases had been under somebody's treatment while they were getting bad and that they would have been very safe cases if operation had been performed earlier. When we consider the very high mortality of the past, we see what has been accomplished surgically by discussions such as we have had here this morning. There is some danger of going home from these meetings overenthusiastic. I always feel, after listening to Dr. Coffey and Dr. Crile, that I will do something, and I have been led to try to do something I could not do; but, nevertheless, we have accomplished a great deal in the treatment of goiter. I want to say a word about metabolism. Some say "What good is it to the surgeon?" I would rather operate on a patient with a metabolic rate of + 65 in the remission period, who has been worse and is getting better, than to operate on one with a rate of + 40 per cent. who is getting worse. If you follow Crile's methods in operating in cases of goiter and have a poor result, you may know it is due to two reasons: one, poor operating and the other, poor surgical judgment. If you have failed in your judgment of the complication, it will be shown at the necropsy.

DR. MARTIN B. TINKER, Ithaca, N. Y.: Twenty years ago, we used to apologize for local anesthesia. Now it seems unnecessary to apologize for the use of local anesthesia in certain selected cases. When I presented the many stage operation at Los Angeles years ago, I felt like a boy being pelted with stones when I got through. It is gratifying to see that some men have come to my way of thinking. I appreciate very much the discussion and agree to all that has been said, and I would have said some of it myself if there had been time. There is one point that has been emphasized by others and that deserves more emphasis: these are not surgical cases alone, are not medical cases alone, but when they have reached the advanced stage that has been

spoken of, they do require preoperative and postoperative medical treatment. At least three of the men present who are doing a large number of goiter operations have a printed outline as to follow-up treatment of patients after they return to their homes. Follow-up care of these people with hearts more or less crippled, and who always will be more or less crippled, is of special importance, in order to put them in the best condition possible. They feel well enough, but unless they are taken care of and take care of themselves, they do not get along very well. Dr. Crile and Dr. Mayo emphasized the fact that goiter is a surgical disease. A very distinguished physician, Dr. Osler, emphasized this point twenty years ago when he said that, after the patient has been unsuccessfully handled for three months, he should be referred to the surgeon. Another point which deserves to be mentioned in this connection is that no matter how simple and how safe the proposition may seem, a man must be prepared to handle almost anything, when he goes into the neck of a patient with goiter. We are not able to tell always when we are going to encounter malignancy, or deep thoracic goiter, or when the toxemia may be a very much graver element than seems at first.

DR. J. EARL ELSE, Portland, Ore.: I want to emphasize two things: first, I hope that no one goes away with the idea that all goiter cases are surgical cases. The majority of cases do not require surgical treatment. Colloid goiters, for the most part, are not surgical cases, and only rarely does a goiter patient in the adolescent age require operation. Goiter accompanied by hyperthyroidism, however, is another matter. The toxic exophthalmic goiters are practically all surgical. The other thing I wish to mention is the relationship of tonsillitis to goiter. If tonsillitis is a direct etiologic factor in goiter, I do not understand why the majority of cases appear in females, because there are probably more cases of infected tonsils in the male than in the female. In view of this fact, it would appear that the relationship, if there be one, is an indirect one. Personally, I am inclined to think that at least in the majority of cases, the relationship is merely coincidental.

79
22

PROGRESS IN CARE AND EDUCATION OF CRIPPLED CHILDREN IN OHIO UNDER NEW LAWS *

BURT G. CHOLLETT, M.D.
TOLEDO, OHIO

The present movement for the care and education of crippled children in Ohio had its beginning six years ago in a very small way in one clinic. A recently formed Rotary Club was looking for some worthwhile work, and its attention was drawn to a particularly sad cripple with prenatal amputation of both arms at the elbow, one leg above the knee, and the other leg and ankle very much distorted, with some bones missing. He was then 12 years old and had never been to school. Following the suggestion of an orthopedic surgeon that the boy would eventually need some surgery, but at the present time it would be better to start his education, he was sent to another city in which his education was started. Later an operation was performed, the patient was given artificial limbs, and now he is self-supporting.

In this locality there was a small dispensary maintained by a district nurses' association. The Rotary Club became very much interested in the orthopedic clinic at the dispensary, and secured for us a brace fund. Interest in this work grew from year to year, the local club furnished a special fund of several thousand dollars each year for the care of cripples and later a special school was started for children unable to attend the regular school. Transportation was furnished, and later a warm lunch was served each day.

A great deal of publicity was given this work throughout the state, and as a direct outcome there was a bill passed by the legislature and an appropriation made to establish a state hospital school for cripples; but the actual starting of building was delayed by the war. In the meantime, several Rotary clubs became interested in the crippled work in their community, and in order to interest other Rotary clubs in Ohio in this work a society was formed, originally of Rotarians, to help crippled children, as a special phase of Rotary work. This society was called the Ohio Society for Crippled Children.

"The object of this society is to create state-wide interest and, by cooperation, aid the state-wide survey and holding of clinics, aiding in adding beds to the present hospital facilities and to aid in the passage of legislation to provide for physical, mental and vocational education and publicity."

One of the first things done was the ascertaining of what was being accomplished in other states. It was found that the majority of state hospital schools for cripples were politically dominated, that they were inadequate in bed space, that their chief field of usefulness was in the immediate surrounding area of the hospital, and that very few cases came from a radius of more than 40 or 50 miles.

Ohio, with a population of 6,000,000, had approximately, according to the figures of other surveys, more than 12,000 crippled children, and one central institution would be a very inefficient approach to the problem.

Ohio had, at that time, three orthopedic clinics organized and functioning in the northern part of the state, one in the center of the state, and two in the south. It soon became evident that the building of a central hospital school, such as exists in many other states, would not meet the problem. So a plan was suggested to enlarge the existing six orthopedic clinics in the state and probably organize two or three new areas, making eight or nine in all. By this method several communities would have centers, smaller than a large central hospital, locally controlled, with much local interest, and the facilities for the care of crippled children would be brought near to the child, avoiding the taking of the child a great distance and out of contact with relatives and home, and the responsibility for the care of cripples would be borne, to a great extent, locally. This plan also offered a more speedy solution to the problem. After a survey of all existing laws for the care of cripples in all of the states had been made by the Department of Labor at Washington, a new law, with the aid of several of the leading attorneys and law makers, was formed and passed about two years ago and is known as House Bill 174.

It was apparent very early in this work that a large number of the neglected deformities were in isolated areas or in the rural districts, and many parents would be financially unable to bear the burden of cure and education and they would be unwilling to allow these children to go any great distance from home. The law was so worded that it permitted the state to take as wards dependent children requiring surgical care. It also made mandatory their care, if necessary. As no

* Read before the Section on Orthopedic Surgery at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

state funds were available for this purpose and probably would not be appropriated in large amounts, the law was so worded that it allowed the division of charities to pay the current bills in the care of these children from a special fund for this purpose, and to charge this amount back to the county from which these children came.

About the same time, the state department of education was given power, by a new bill known as House Bill 200, to establish special schools in any locality in which eight cripples could be assembled. The local board of education is obliged to provide the school room and spend a per capita amount equal to the amount spent on normal children, to which the state department of education is to add an amount up to $300 for each child each year. To this may be added $250 per capita for boarding if a child is outside the jurisdiction of the local board of education. With this fund available, transportation and hot lunches can be supplied and a special teacher can be provided for any such school. This law further provides for instruction in the home of children who cannot be transported to a school.

As the enforcement of laws depends on the popularity of the law and the wishes of the community, a regular campaign to care for and educate cripples was begun and has been carried on for the last three years by all the Rotary clubs in Ohio, numbering forty-eight, with a membership of more than 4,000 composed of representative business and professional men in their respective communities, and the influence of this body of representative citizens has been great.

It was early apparent that there were many agencies, both official and private, having some contact with this work, and that some sort of representative committee must be established to coordinate the activities and to get the cooperation of all, with the result that an advisory state council for the handicapped was formed, composed of a representative from these official agencies: the state board of health, state department of public welfare, state department of education, state department of vocational education and department of industrial relations; also a representative from these private agencies: Ohio Medical Association, Ohio Hospital Association, Ohio Society for Crippled Children, Ohio Institute for Public Efficiency, Ohio Public Health Association and Ohio Red Cross.

The purpose of this council was "to serve as a clearing house among the public and private state-wide agencies in Ohio concerned with the welfare of the handicapped and by discussion and advice to develop cooperation among them."

The Ohio Institute for Public Efficiency effected the organization of all these interested agencies, and has since been most helpful in supporting the individual agencies and coordinating and directing the combined effort of all these varied activities as they pertain to crippled children.

The next important step was the formation of the professional advisory committee, composed of five orthopedic surgeons, attached to the division of charities of the department of welfare. The function of this committee is to assist in passing on the qualifications of surgeons and hospitals caring for this type of case. It was realized that it was most important to have the helpful cooperation of all medical men, especially of all the orthopedic surgeons and agencies interested in this particular work, and to fix high standards and to help safeguard the patient, hospital and surgeon.

The popularization and the spread of this work over the state was very rapid, and the number of beds offered was as great as could be efficiently handled, so that an effort has been made to keep the difficult surgical cases in the hands of orthopedic surgeons of known experience and judgment.

Instead of making a social service survey per se, it was decided that a survey be made in the form of a diagnostic clinic similar to the tuberculosis clinics that have previously been held, and a number of clinics have been held following the suggestion that the facilities be taken to the child. Forty-four clinics were held during the first nineteen months, and about 2,500 children were examined. Most of these clinics, following the suggestion of the board of health, were held in rural counties rather than in the already established orthopedic centers, these counties having no special hospital facilities or specialized medical men.

The rules for handling the clinics and the departments interested are:

1. Supervision of the clinic is under the bureau of child hygiene of the state health department, and cripples of all ages and all social classes are examined, through the local health commissioner and the county medical society with the help of known orthopedists as consultants.

2. The division of special classes of the state department of education handles children aged from 6 to 18, and organizes and advises special public school classes for crippled children, admitting children not now in school and those who would be better off in special rooms—those with crutches, braces, casts, bone tuberculosis, etc.

3. The division of civilian rehabilitation handles adults over 16, places in training handicapped adults over 16 and through the seventh grade, injured from birth, by disease, by accident or by injury. "Such adults must have ambition, and their physical condition and employment object justify the training." Funds for this department are supplied by special federal act which grants an amount equal to the amount raised in the state for this purpose.

4. The children under 18 who can be benefited by treatment and whose parents cannot or will not furnish such treatment may be committed by the judge of the juvenile court to the child's bureau of the department of welfare, which assumes guardianship and supervises the child's care in whatever hospital of the state it sees fit to place the child. Hospital bills, surgeons' fees and bills for special examinations, braces, etc., are paid for and charged back to the county from which the child came.

Most diagnostic clinics, following the suggestion of the board of health, have been organized through the local health commissioner and the county medical society, private agencies, Rotary, Kiwanis and Exchange clubs, the Red Cross, the federation of charities, judge of the juvenile court, county school superintendents and county commissioners affiliating, to support and aid in the actual holding of the clinic, together with representatives from the foregoing departments.

Since the first object of the clinic is to furnish an expert diagnosis, the medical agencies are the primary ones interested; but it seems logical to make the clinic

also a clearing house for all the problems in the educational and vocational training and treatment of cripples.

A survey of cripples is sometimes made before holding the clinic, but this is not necessary, as experience has indicated that proper advertising brings in more cases heretofore unknown than the number so laboriously hunted out. Such individual efforts would be better spent after the clinic in the follow-up work. Cripples of all ages should be invited, as vocational training is available for the adults. The clinic is usually held in the courthouse and, if possible, on the regular meeting day of the county medical society, with the consulting orthopedist available to address the meeting. Records are taken of the diagnosis in each case and given at the time to the parents; copies are also made for the medical authorities and the medical members of the private agencies which are to help in the follow-up work.

The people able to pay for services plan with their own physician for the treatment, but indigent cases will be followed by the county nurse to see that state provisions or private relief are made available. After the clinic, the work is carried on locally. The clinic is of little value without intelligent follow-up work, and here is the great field for the private agencies, chief among which is the Ohio Society for Cripples.

One of the striking results from some of the early clinics held in rural districts was a strengthening of the position of the health officer, health nurse and school nurse, the establishment of local clinics and the enlarging of the local health activities.

The special schools for cripples in the state have grown until there are, at present, special schools in eleven cities with an attendance of 400; ten other cities are in the process of such organization. Approximately 300 indigent cases have been cared for through the state departments; the exact number of private cases is not available, but is probably greater. In one clinic that was held, 120 children were examined, and the condition of nose, throat, chest, teeth, nervous system and deformities was recorded, with diagnosis and outline of treatment. Every member of the local Rotatry Club of 100 either drove his own car or furnished a driver for the day, was made responsible for at least one child to and from the clinic, and agreed to hold himself ready to transport the same child, at any time during the year, to the hospital for after-treatment.

The influence of private agencies in aiding in the formation and organization of the present plan in carrying out the follow-up work has been of inestimable value. The most active single agency is the Ohio Society for Crippled Children, composed of representatives from forty-eight Rotary clubs in forty-eight separate communities with a membership of more than 4,000. It has sponsored this work from the beginning, and has made it the chief work of the organization in Ohio.

Similar agencies have been formed in the Rotary clubs of New York and Michigan, with Kentucky, Tennessee, Indiana, Illinois and Ontario making inquiry and anticipating organization.

The interest and enthusiasm shown in these states led to the formation of the National Society for Crippled Children in December of last year; and, by the admission of the Province of Ontario, Canada, an international society has now been organized. The object of this society is to interest the 1,000 Rotary clubs, with more than 76,000 members, in twenty countries, in this work.

The week of May 8, the birthday of Mr. Edgar Allen, the active organizer of this crippled children's work in Ohio and president of the Ohio Society for Crippled Children, was set aside by proclamation of the governor of Ohio, to be designated as Crippled Children's Week; every Rotary club gave a special program featuring the work of crippled children and much newspaper publicity was given this work.

The main activity of the future will, of necessity, be the care of convalescent cripples, the carrying out of treatment, education and vocational and occupational training. The establishment of convalescent homes, rather than the enlargement of hospital facilities, is being planned. An effort is being made now to combine with the present facilities at hand all interested agencies, and to centralize and aid in the distribution of all bequests, legacies and special fraternal funds, to the end that the smallest amount of money may be spent for monumental edifices and that the greatest ultimate good to the child may be accomplished.

Another recent innovation has been the establishment of a liaison office in Columbus by the Ohio Society for Crippled Children, so that the private agencies can have closer contact with the state departments.

I feel that the success of this movement, which may eventually circle the globe, depends on medical guidance and, specifically, on the guidance and energy of the orthopedic surgeons. This paper was written that orthopedic surgeons may have first hand information of the present status of the movement and, by their criticism and suggestions, aid in constructing, perfecting and directing this movement, as it spreads, so that it may remain nonpolitical, nonsectarian and medically controlled, to accomplish the greatest good to the greatest number of cripples; also to stimulate more widespread interest in the scientific cure of deformities.

421 Michigan Street.

ABSTRACT OF DISCUSSION

DR. ROBERT B. COFIELD, Cincinnati: The principal feature of the work done in Ohio has been bringing facilities to the child. Of course, that is not possible in the less thickly populated states or where clinics and hospital treatment are not as plentiful as they are in Ohio. We have a number of good hospitals in our state and a number of good orthopedic surgeons to do the work. It seems to me that we can cure many more of these children by going to them instead of having them come to us or leaving them in state hospitals. Another thing is a state-wide survey. As Dr. Chollett says, it is very nearly impossible to hunt out these cases, but if diagnostic clinics are held and if they are advertised in the local papers, the parents will bring in the children for diagnosis and to ascertain what can be done. These diagnostic clinics are held in towns in which there are no orthopedic clinics, in the smaller towns or in the county seats. The Rotary Club is usually the prime mover in this affair, seeing to it that the children come. A record is made of the diagnosis, and the work is followed up through the Red Cross and other agencies. I think an advisory committee is very important in directing these cases into the hands of competent orthopedists. There is a tendency for every man who has ever seen an orthopedic operation to say, "Yes, I can do that; send the case to me." Most practitioners are willing to attempt any kind of work, whether they can do it or not. The work of the advisory committee is to look into the qualifications of every man doing this work in the state, and the various state agencies refer the child to the proper man to do the work.

MILK-BORNE DIPHTHERIA

MALCOLM GRAHAM, M.D.
AND
E. H. GOLAZ, B.S.
Director of Laboratories and Director of Bureau of Food and Drugs, Respectively, Texas State Health Department
AUSTIN, TEXAS

An unusual epidemic of diphtheria occurred in Austin, Texas, in the spring of 1922. Austin has about 40,000 inhabitants, including 4,200 students at the University of Texas. During January and February, ten cases of diphtheria in all were reported; eleven new cases developed by March 20, and twenty-three more by March 30. The disease was of extraordinary virulence, and laymen early called it black diphtheria. Very early in the disease, the appearance of the throat was peculiar. Both tonsils were covered with a thin, milky-looking membrane that shaded gradually into tissue that appeared normal without any sharp line of demarcation. The mucous membrane was not of the usual vivid red. The membrane which appeared in several parts of the throat simultaneously involved an unusual area, and it quickly developed a dirty, black appearance. In cases appearing early in the epidemic, repeated large doses of antitoxin were required, which in many instances was given intravenously. The epiglottis was involved in one case, and the larynx in two others.

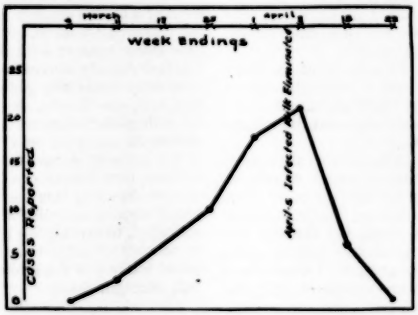


Chart 1.—Reported cases of diphtheria by weeks, March and April, 1922, at Austin, Texas.

In seven of twenty-three cases reported late in March, the patients were university students who took their meals at the same boarding house. The cook and her baby had had diphtheria a month before, and the baby died of the disease. Search for the cook was fruitless, as she had been discharged when sick and had left the city. The interval between her departure and the first appearance of the disease was too long to fix the responsibility on her, and the epidemic was too explosive to be due to ordinary carriers. Except for the students, the cases were scattered irregularly in different parts of the city. The situation grew worse, and the medical authorities at the university requested aid from the state health department, suggesting that the milk supply at the students' boarding house be investigated.

Accordingly, representatives of the state health department inspected the responsible dairy. It was found that the milk came from a creamery in the city owned by B., who had two dairies, B and H, several miles apart. Milk from Dairy B, which was about 5 miles outside the city limits, was carried in 5 and 10 gallon cans to the creamery, where it was bottled and distributed to customers. While the containers were sterilized, the milk sold was all raw milk. The herd consisted of fifty-one graded Jersey cows. A large percentage of the animals had cuts and abrasions of the teats and udder due to the barbed wire fences, so common in this state. The milking was done by Mr. S., his wife, and their son.

Cultures were made from the nose and throat of the milkers, and from the four other children in this family, none of whom gave any history of illness or recent sore throat. Examination of this family disclosed apparently normal throats and noses. Other employees of the dairy were likewise examined; cultures were taken, but a history of illness was not obtained from any one. However, the proprietor informed us that his grandchild had been ill with throat trouble for some time, and that she had had "several injections of some kind of medicine." The child lived on the premises with the proprietor about 100 yards from the dairy proper. Examination disclosed an extensive, dark, necrotic membrane, occupying both tonsillar fossae and extending posteriorly on the pharyngeal wall. The child was markedly toxic and prostrate. She had been seriously ill since March 29, but had not been near the dairy, nor had she handled any containers or utensils in that time.

Humpy, a cow, had three teats with sores covered with thick, black scabs, which, when removed, left a ragged, ulcerated surface that exuded a mucopurulent fluid. The teats and udder were tender, and only Mr. S. could milk this cow. He said that the sores had existed since about February 1, that they had been much worse, and that they did not heal like the sores on other cows. Cultures were made from the teats and udder of this cow, and from all other cows having abrasions on the teats or udders. In view of these findings, and without awaiting the results of the cultures, we ordered B. to sell no more milk until further notice, and to notify all customers to destroy what milk they had on hand. This was done, but some milk had been resold through other dealers, and it was not possible to trace it all.

The cultures from the throat of Mr. S., milker at Dairy B, was a pure culture of *B. diphtheriae*, although, as noted before, examination gave no evidence of infection. The sick grandchild gave a positive culture, also, of the same granular type of bacillus as was found in S. Cultures from Humpy were all positive and similar to the organisms in Mr. S. and the child. All other cultures of employees and cows were negative. The cultures were all repeated with the same result. At this stage of the investigation, we believed that S. was a chronic carrier who in some way had infected the cow Humpy, and that the grandchild was infected secondarily through the milk. Subsequently, this was proved incorrect.

The dairyman's route through the city could be traced by diphtheria cases. Twelve cases had developed from the boarding house near the university, and seven had developed from a down-town boarding house, also supplied by this dairy. Scattered between these places were many other customers, sick or con-

valescent from diphtheria. Two members of a college ball team that had stopped at the down-town boarding house developed diphtheria after leaving Austin. Another case was traced to a hotel using milk from Dairy B. Virtually every case that developed after March 15 could be traced to this dairy. Most of the patients were milk drinkers, but two had taken no milk, and were infected by butter made from the infected milk.

Dairy B was inspected again. New cultures were taken. All utensils were sterilized. Arrangements were made to pasteurize the milk for thirty minutes at 145 C., and Humpy and her milker were quarantined. Cultures were taken of all contacts at the two boarding houses, and among the well boarders eight throats were found teeming with diphtheria bacilli. Of the eight, one developed diphtheria three days later, six had negative cultures one week after quitting the milk, and one remained a carrier until his tonsils were removed.

A sharp drop in new cases followed the stopping of the distribution of this milk. The dairy was closed, April 5. In the week ending April 8, twenty-one cases of diphtheria were reported, the next week six cases were reported, and the following week two cases. S., whose culture was positive at the first dairy inspection, had a negative culture four days after he quit drinking this milk.

But the original focus of infection was not discovered yet. S. insisted that Humpy had peculiar sores on her teats when he first came to work for the dairy, January 10, and that before January 1 this herd had been milked by Mr. M., his wife and child, who were now milking for Dairy Z. Simultaneous with this disclosure, two new cases of diphtheria were reported among the customers of Dairy Z, and an inspection there was made at once.

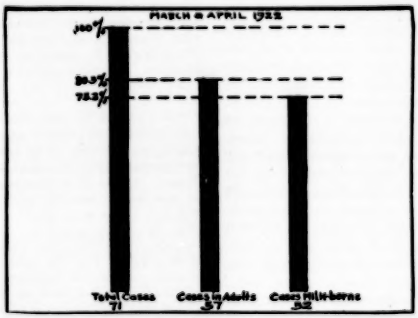


Chart 2.—Percentage of cases in adults and percentage of milk-borne cases.

The herd at Dairy Z was in excellent condition, the surroundings were sanitary, and the methods of handling the milk were good. Close questioning of M., the milker, and his family, gave no history of illness for several years. Cultures were taken from the nose and throat of each one, however, as well as from all abrasions on the udders and teats of the cows. These were all negative except the culture from M.'s nose, which gave a luxuriant growth of typical diphtheria bacilli.

Closer examination now revealed a perforating ulcer of the septum, which was covered with a white, membranous deposit. We learned that the perforation had existed four years, that it had been diagnosed syphilitic, and that several treatments had been administered. M. had had difficulty at times for a year breathing through his nose, and would relieve himself by blowing violently to force from the nostrils a mass of whitish material.

Repeated cultures that were taken from this ulcer were positive, and the organism was powerful enough to kill a 350 gm. guinea-pig in thirty-six hours. Another pig injected but protected by antitoxin had no ill effects. M. was quarantined, and even with intensive treatment, his ulcer remained positive for many weeks for the diphtheria bacillus. In this connection, it is interesting to note that Humpy, with no treatment, was entirely free from lesions and gave negative cultures within a week.

It was now reasonable to believe that M. had infected Humpy when he worked for Dairy B before January 1. The cow was dry around the new year, and was not milked until February 1, shortly after which date diphtheria appeared among the dairy customers. It is puzzling to explain the explosion of new cases late in March. The milk fairly teemed with diphtheria bacilli, and the majority of susceptible persons using this milk contracted diphtheria. Twelve out of ninety-five at the university boarding house were taken sick, and that is about the percentage of adults not immune to the disease.

Seventy-one cases of diphtheria were reported in February, March and April. Fifty-two of these used milk from Dairy B. From March 22 to April 10, of fifty cases reported, forty-three were traced to this milk. Seven could not be traced, and of these, five were children. During the epidemic stage, more than 80 per cent. of the cases were in adults. Stress of work prevented additional virulence and Schick tests. The cases were much milder late in the epidemic, and the membranes appeared more like the usual type.

Milk-borne diphtheria is probably more common than is generally supposed. The importance of cultures from both the nose and the throat in such outbreaks is apparent. Cultures from M.'s throat were negative.

SUMMARY AND CONCLUSIONS

The following facts are worthy of note:

1. Fifty-two cases of a total of seventy-one were traced to infected milk.
2. More than 80 per cent. of the cases were in adults.
3. The membrane was atypical, and the infection was unusually virulent.
4. Nose cultures should always be taken as well as throat cultures.
5. Dairy animals should be carefully inspected in all milk-borne epidemics.

Increasing Virulence of Smallpox.—Reports from twenty-four states, and from 190 cities, including all the larger ones, show that the smallpox prevailing during the first six months of this year was of far more virulent type than that prevailing during the period of 1921. The number of cases was 72 per cent. less this year in twenty-four states combined, and 74 per cent. less in 190 cities. In these cities, however, the number of deaths during the first six months of 1922 was nearly four times the number reported in the same period of 1921.

HEMATURIAS OF OBSCURE ORIGIN *

A. R. STEVENS, M.D.
NEW YORK

The causes, medical and surgical, of blood in the urine are so manifold that the more one studies the subject the more is one inclined to the belief that a thorough understanding of hematuria means a comprehensive knowledge of diseases of the whole body. Although hematuria brings to mind, first, neoplasm, tuberculosis and calculus, and then trauma, acute inflammation and nephritis, there is finally a long series of rarer causes of this common finding of medical examination.

The literature is enormous. Since the war, numerous articles have appeared presenting illuminating reports of unusual cases with a proved etiology, or offering new points of view concerning old problems. The general tendency marks a growing reaction against the use of the words essential and idiopathic as applied to hematuria. Most urologists will agree that essential or idiopathic hematuria does not exist, if one considers sharply the real meaning of the words, and that the expressions as commonly used merely denote hematuria of unknown or obscure origin. But, if used at all, we should restrict such phrases to negative necropsy cases only. We should not include cases depending on the negative findings in one kidney removed at operation. Far less should we be willing to base a diagnosis of "essential hematuria" on clinical observation alone. Reports of obscure hematurias not diagnosed and not supported by a careful necropsy may be interesting, but they have not a fraction of the value of cases carefully observed and examined and reexamined until the problem is finally solved. The plea is made to content oneself with an anatomic diagnosis only, and to continue the search by repeated observations to attain this desideratum.

The following case reports illustrate the ultimate explanation of certain obscure hematurias.

REPORT OF CASES

Case 1.—A man, aged 37, was referred to me last fall because of blood in the urine. His general health had been excellent. Fourteen years previously, he had passed blood in the urine off and on for six months or more. Treatment received at that time was evidently aimed at prostatic disease. For the last ten years, there had been occasional abdominal pain radiating from the left lower abdomen to the penis. Blood had been seen a second time twelve years previously; but no hematuria had been noted for more than ten years prior to April, 1921, when blood reappeared in the urine, and a diagnosis of left renal calculus was made on the history and a supposedly positive roentgen-ray examination.

Blood recurred in the urine in September, 1921, without any associated symptoms. Cystoscopy by the patient's physician revealed a small ulcer on the right bladder wall. I confirmed this, and also obtained normal urine from the right ureter. But the region of the left ureteral orifice was edematous, and no catheter could be made to enter this side, although an attempt was made on several occasions. The phenolsulphonephthalein and indigocarmin tests were employed at different times. These indicated good function of the right kidney, but no dye was obtained from the left side. The bladder urine contained blood and a little pus, but no tubercle bacilli on many examinations.

A piece of tissue, removed from the ulcer, was reported by the pathologist as "suspicious of tuberculosis"; and, later, typical tubercles appeared about the left ureteral orifice. Left nephrectomy was performed. The kidney was small and markedly sclerosed; and, microscopically, typical tuberculosis was found at various sites. The case is reported because of the long period which elapsed without hematuria, during which time the patient regarded himself as cured; and as an example of obscure hematuria which ultimately fell into one of the more commonly recognized groups.

Strauss [1] reports a similar case, which had been previously diagnosed essential hematuria.

Case 2.—A physician, aged 32, whose mother had died of tuberculosis, was seen in May, 1918, for hematuria. He recalled having passed bloody urine in 1910 and 1912. Later in 1912, he had a severe attack of left abdominal pain thought due to acute indigestion. In May, 1918, he noted abdominal discomfort, chiefly on the left side, followed in a few hours by the passage of bloody urine. Cystoscopy that day disclosed blood coming from the left ureter. Urine obtained from both ureters contained neither pus nor casts, and urea percentage and phenolsulphonephthalein output were the same from the two kidneys. Roentgenograms on two occasions did not show calculi of the urinary tract. In various consultations, some of the opinions were strongly in favor of tuberculosis, as both family and personal history pointed that way.

The patient suffered no further inconvenience and, taking matters in his own hands, went on with his accustomed active life. Frequent urine examinations the ensuing year invariably disclosed microscopic blood. All went well until November, 1921, when an attack of severe left renal colic came on. Roentgenograms a few days later showed a shadow along the course of the left ureter. Sharp pain in the left lower quadrant was experienced the following day, and a stone passed through the urethra five days later.

Case 3.—A physician, aged 34, had had remarkably good health, marred only by an attack of right renal colic followed by the passage of a calculus ten years prior to the present illness. At the close of a year's service in France, and while he was feeling entirely well, the patient noted, Oct. 26, 1918, that his urine was bright red. Roentgenograms taken the next day were negative. Bladder papilloma was strongly suspected. Circumstances precluded cystoscopic examination at that time. For the next three months, there were many attacks of marked hematuria, apparently induced by even moderate exercise, such as climbing several flights of stairs. There was absolutely no pain or discomfort anywhere during all this time of marked bleeding, until Feb. 4, 1919, when a typical attack of severe right renal colic came on. Roentgenograms were reported negative, but after I had proved ureteral calculus by means of a wax-tipped catheter, a reexamination of the plates disclosed a suspicious shadow. Six weeks later, after more ureteral colic, the stone was passed through the urethra. Curiously, after the onset of pain, no macroscopic blood was ever seen.

Case 4.—Another patient with calculus is worthy of mention. For five months, he had had cloudy urine, with an occasional tinge of blood, and once, after a long walk, a large amount of blood appeared. There had been no pain in the back or abdomen, and no discomfort of any description, except a varying degree of pain in the right testicle and cord. This tended to distract attention from the true source of the blood, and in fact the patient was given a thorough overhauling by a well-known urologist without obtaining a diagnosis. Fortunately, at the time of my cystoscopy, blood was seen issuing from the right ureter. A renal calculus was indicated by roentgen ray, and was removed by a pyelotomy incision. After operation, the urine became entirely clear.

The last two cases clearly refute the view held by many that gross hematuria due to stone is always preceded or accompanied by pain. Escudié [2] reported four similar cases, in patients who had had hematuria refractory to medical measures for weeks or even months, without associated pain, which eventually was proved due to calculus.

* Read before the Section on Urology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

1. Strauss: Berl. klin. Wchnschr. 55:97, 1918.
2. Escudié: J. d'urol. méd. et chir. 10:381 (Dec.) 1919.

However, in many instances of obscure hematuria, no such satisfactory outcome as in the cases reported will be attained. There may never be enough blood in the urine to permit even localization of its origin; nor may there be evident any abnormality or deficient function to give indication of the condition. Hematuria is often intermittent or, indeed, may not be repeated at all; and many such cases will never be explained. But we are learning more and more of these transient conditions. Blood in the urine has been reported many times as the result of physical exercise and fatigue in athletes, and latterly in soldiers, with cold as an added factor.[3] These are convincing reports; but in considering an individual patient, one must be guarded in offering such an explanation as final, remembering especially the liability of exercise to initiate bleeding in renal calculus.

Gross hematuria is found in acute fevers, and microscopic blood may be present during convalescence.[1] Cardiovascular disease, various purpuras (including scurvy), syphilis, nephritis, malaria and many other conditions may cause transient or intermittent hematuria, as may certain drugs (hexamethylenamin, phenol, barbital, etc.). The therapeutic test may permit strong convictions regarding probable relationship between the supposed cause and the symptom. Such causes of hematuria as appendicitis [4] and other extrarenal conditions, varices of the bladder,[5] hydronephrosis, especially with mobility of the kidney, and polycystic kidneys one may diagnose with reasonable certainty from the findings of routine examination. But certain conditions of the renal pelvis, such as varicosities and angiomas,[6] we can scarcely expect to prove without exploratory operation.

Interesting group cases of hematuria occurring over a long period of time in many members of a family, without apparent specific cause, are found in the literature.[7] The etiology of these conditions remains theoretical.

Perhaps our most interesting problems concern cases of bleeding of renal origin, unilateral or bilateral, with or without pain, in which our complete modern scheme of investigation fails to establish a diagnosis. More than twenty years ago, Israel [8] pointed out that nephritis may exist in an advanced stage without the usual urinary findings; that nephritis may be unilateral; that it may be accompanied by unilateral pain though bilateral disease is present, and that nephritis may cause massive hemorrhage suggesting neoplasm. These conclusions are commonly accepted, except that divergence of opinion exists regarding the frequency of unilateral nephritis.[9] O'Neil [10] believes that the confusion is due to failure to differentiate between nephritis of toxic origin (usually if not always bilateral) and that of infectious origin (often unilateral, and even confined to a part of the kidney).

Hunner,[11] on the basis of his stricture work, offers a new explanation of many known facts concerning renal hematurias of obscure origin. He thinks the increased intrapelvic pressure due to partial obstruction explains many facts, without frequent resort to the theories of renal congestion and increased intracapsular tension, suggested by Israel, Harrison, Strauss and others. The presence of nephritis with certain stricture cases, Hunner explains on the basis of his convictions concerning the focal infections as the origin of both lesions. He urges the need of elimination of such foci before permanent relief can be obtained from local treatment, in certain instances.

The frequency of gross hematuria occurring with typical toxic nephritis is hardly appreciated by the urologist, as he is seldom asked to see the typical cases. In making a study of hematurias during the war, Peters and I had no trouble in finding for cystoscopy thirty clinically typical cases with gross blood in the urine.

Both German and French writers, in explanation of certain obscure hematurias, refer to "disturbed renal vasomotor system" and to "angioneurotic" and "neuropathic" origin of hemorrhages,[12] but in practice we must be slow to apply such explanations to hematuria, and should persist in the search for an anatomic diagnosis.

Beer [13] warns against the possibility of error in accepting a plausible cause of bleeding as the true and only one. He operated on a bleeding kidney, found granular nephritis, removed tissue for examination and sewed up the wound. The pathologist confirmed the diagnosis of nephritis. Later, a second operation was performed, the kidney was removed and a papilloma of the pelvis found. Acute nephritis and renal calculus may coexist; as in a case reported by Strauss.

The following reports illustrate a similar multiplicity of conditions, but in the bladder:

CASE 5.—One of my patients had an adenomatous prostate removed by another surgeon, chiefly because of profuse hematuria thought to be prostatic in origin. The blood persisted after operation, and cystoscopy revealed on the floor of the bladder several small papillomas, to which a blood clot adhered. The diagnosis seemed clear, and these growths were readily removed by high frequency current. But no improvement followed; and, on further examination, with great depression of the handle of the cystoscope, there was found on the anterior bladder wall, just above the symphasis, a small carcinomatous growth, which was subsequently removed by operation.

CASE 6.—A case seen in December, 1920, with a history of urinary frequency and burning and occasional hematuria for a period of eight weeks, was diagnosed by me as nongonorrheal infection of the prostate and lower urinary tract. Cysto-urethroscopy was performed, and no tumor was seen. A report received three months later stated that the symptoms had all disappeared under treatment for the infection. However, they recurred in another five months, and I was much chagrined to learn recently from a colleague that he had removed a large tumor from the patient's bladder fifteen months after my examination.

Such reports as those made by Thomas,[14] and more recently by Quinby,[15] of renal varices, with the diagnosis supported by careful examinations of the removed kidney, make for progress. I wish to put on record a case very similar to one of Quinby's.

CASE 7.—A negro, aged 28, was admitted to a base hospital in France in November, 1918, complaining of hematuria. The past history was unimportant. Beyond a slight backache,

3. Nassau: Ztschr. f. Kinderh. **29**: 133 (June) 1921. Ztschr. f. klin. Med. **84**, Nos. 1 and 2, 1917. Feigel and Querner: Ztschr. f. Klin. Med. **83**, Nos. 3 and 4, 1916.
4. Hunner, G. L.: Acute Pyelitis Due to Acute Appendicitis, J. A. M. A. **50**: 1328 (April 25) 1908. Speed, Kellogg: Surg. Clinics, Chicago **1**: 1097 (Oct.) 1917.
5. Marion: J. d'urol. méd. et chir. **12**: 417 (Dec.) 1921.
6. Hyman: Am. J. Surg. **34**: 312 (Dec.) 1920.
7. Pearson: Lancet **1**: 91, 1904. Aiken: Lancet **2**: 444, 1909. Neave: St. Bartholomew's Hosp. J., London **13**: 123, 1905-1906.
8. Israel: Chir. Klin. d. Nierenkrankheit, 1901.
9. Strauss (Footnote 1). Kotzenberg: Ztschr. f. Urol. **2**, 1908. Kuemmel: Med. Klin. **35**, 1916.
10. O'Neil: Internat. J. Surg. **33**: 72, 1920.
11. Hunner, G. L.: To be published.
12. Strauss (Footnote 1). Jacquett: Progrès méd., July 8, 1911, p. 325. Casper: Med. Klin. **16**: 169 (Feb. 15) 1920. Lancereaux: Gaz. d. hôp. **73**: 1075 (Aug. 23) 1900.
13. Beer: Personal communication to the author.
14. Thomas: Proc. Path. Soc., Philadelphia, 1910, New Series 3, p. 256
15. Quinby, W. C.: J. Urology **4**: 209 (June) 1920.

the patient had had no symptoms, urinary or otherwise, except blood in the urine; this had been noted constantly for four or five weeks. The urine contained albumin and red blood cells, but no pus nor casts, on seven or eight examinations. Cystoscopy disclosed a normal bladder mucosa, and bloody urine coming from the left ureter and clear from the right. Cystoscopy repeated in a week gave the same findings. Roentgenograms were negative for stone, and a pyelogram was normal. Left nephrectomy was performed, November 26. The kidney was not enlarged; the pelvis was normal; about two thirds of the papillae contained fine hemorrhagic spots, and a few showed dilated veins. The specimen was examined carefully by Dr. David Marine, who found a normal cortex, no evidence of nephritis or inflammation, but dilated veins with many small hemorrhages in the substance of the papillae, and free blood in some of the tubules. Convalescence was rapid and uneventful. The urine was free from blood during the time of subsequent observation (one month).

This case bore some resemblance to the group described as "urinary tract purpura" by Peters and me,[16] but the history was not typical, and purpuric spots were not present in the bladder.

CONCLUSION

It is hoped, by citing from personal experience and from the literature, instances of hematuria baffling at onset and sometimes continuing so for months or years, but ultimately falling into one of the well-recognized groups, to encourage not only thorough but also repeated examination and observation of obscure cases over long periods of time. The rôle of nephritis, toxic and infectious, in the etiology of hematuria, has been mentioned and attention called to the possibility of an entire absence of other signs of the disease. The possibility of two or more existing causes of hematuria giving rise to error has been illustrated. Some of the established rarer causes of bleeding (without an attempt at a complete cataloguing) and the newer ideas regarding obscure hematurias have been referred to.

Considering hematuria cases by and large, with either microscopic or gross evidence of blood, one must be prepared for many failures to establish a diagnosis. Clinically, it seems safer to regard all bleeding as due to some tangible anatomic lesion or a less evident one of toxic origin, and saner to discard the notion of idiopathic hematuria. The latter diagnosis cannot reasonably be made until after death, and when a complete necropsy has failed to assign a cause for blood in the urine; and only then should we resort to vasomotor or neuropathic theories in final explanation. But remembering the frequent irregularity of hematuria due to serious lesions and its proneness to cease for long periods (with or without treatment and whether the treatment be manipulative or surgical), it would seem that the best interests of the patient and of medicine will be served by thorough and repeated examinations and insistence on observation over a period of months or years, if this can be done tactfully, without upsetting the patient's morale.

ABSTRACT OF DISCUSSION

DR. HERMAN L. KRETSCHMER, Chicago: The loose use of the terms essential hematuria and idiopathic hematuria is fast disappearing from the literature. This is due to the modern methods of diagnosis and intensive study devoted to all cases showing blood in the urine. The group of cases presenting gross blood in the urine, and in which all of the findings are negative, form a very small number, to be sure, yet all of us meet with this situation at various times; and it is this group of cases that give me the greatest concern, for fear of overlooking some important lesion. While our attention is so often focused on the kidney or bladder, it may be possible that the lesion producing the bleeding is located in the ureter and is overlooked. I have in mind ureteral calculi which do not show in the roentgenogram, and papillomas of the ureter. Secondly, there are certain rare lesions of the kidney which produce hematuria. I think that Dr. Stevens referred to the so-called angioma of the renal papillae, a lesion first described by Fenwick of London and later by Cabot. If this condition is recognized, the angioma can be resected and the kidney saved. In cases in which the kidney was removed for profuse bleeding, and in which the laboratory reports "nothing found to cause or explain the bleeding," careful personal examination may reveal small lesions which have been overlooked. I refer to the presence of small areas of infarction. I have seen kidneys removed for severe hemorrhage that were reported as normal kidneys, in which I believe small areas of infarction were present. In certain other cases, careful microscopic study discloses vascular changes, such as thickening of the intima, and fibrillation of the elastica, so that changes are found, and these cases are not really normal. The importance of careful microscopic study of these kidneys is to be noted, not of one section but from many pieces of tissue cut from various parts of the kidney. There are also certain lesions of the renal pelvis that produce severe hemorrhage. I refer to cases of pyelitis granulosa, a lesion that it is almost impossible to diagnose clinically. Among the general causes, I should like to mention cases of infected tonsils in which there is no evidence of infection, but very often the hemorrhage disappears after removal. Then, another group must be considered, in which the first symptom of nephritis may be a profuse bleeding; and if one watches these cases it will be seen that they run the typical clinical course of nephritis, but at the onset of the bleeding there are no clinical symptoms of nephritis present.

DR. LOUIS E. SCHMIDT, Chicago: I should like to know whether, after careful examination, the hematuria continues to such an extent that operative interference becomes necessary. If so, an exploratory operation is indicated. Then, if after delivery of the kidney and exploration of the pelvis, one cannot find any pathologic condition, and if the hemorrhage has not been dangerous to life, I do not believe that the kidney should be removed. I have seen cases in which the kidney has been removed for rather severe hemorrhage and no pathologic lesions were found. I am inclined to believe that in these cases the operation of decapsulation is indicated. Dr. Kretschmer omitted one of the most important conditions that can really and actually be the cause of these so-called hematurias, when no cause can be found clinically —slight injuries, often not sufficient to produce hematuria but sufficient to cause slight hemorrhages and not sufficient to cause formation of a hemotoma, which involves either the true or fatty capsule or both, which in time may become organized and then permit of intracapsular pressure. I have operated in cases undoubtedly of this type, and after decapsulation the patients have been free from further hematuria. Some of these cases have been observed for more than fifteen years.

DR. HUGH CABOT, Ann Arbor, Mich.: I want to introduce into this discussion a group of cases which have interested me for a long time and in which I believe that infection is the basis, but the infection is slight, and the most common evidences of infection, pus and bladder changes, are not present. Some years ago, I saw two patients with acute hematuria and fever. Since then, I have seen a few others, and I have now succeeded in collecting and putting together a group of seven cases of relatively young adults with acute and painless hematuria, whose urine showed little or no pus, but in whom infection was, by careful examination, always to be found. I wish to correlate these clinical findings with a paper recently published by Quimby, with a very interesting report on the removal of a kidney by Goodpasture, who made the suggestion that the lesion was due to chronic infection. The changes in the kidney were those of chronic infection but not of any typical, well known infection. I think there

16. Stevens, A. R., and Peters, J. P. Jr.: J. Urology 4:1 (Feb.) 1920.

V. 192

is a distinct group of hematurias of obscure origin which are quite definitely due to infection; in my series the colon bacillus has been found in five cases and the streptococcus in one. In these cases the lesion is primarily of the renal pelvis, and the treatment, therefore, is of the pelvis itself. My own experience is altogether too small to warrant conclusions, but it seems that the pathologic picture described by Goodpasture might be the fundamental lesion.

DR. G. R. SATTERLEE, New York: In work on focal infection we run across cases of hematuria. A more complete study of focal infection is essential. A woman, with a severe oral infection due to hemolytic streptococcus, shortly after a dental operation developed very severe hemorrhage and anuria on the right side. No cultures were obtained and nephrectomy was performed by a very conservative surgeon, who, because of nodular appearance, thought it was not safe to leave the kidney. On dissection, several large and many small abscesses were found, cultures from which showed pure colon bacillus. Since then we have used an autogenous vaccine made from the colon bacilli obtained from the urine, and the patient has improved. Another case was that of hematuria of twenty years' standing. The patient had had an infection in a tooth of the upper jaw. Its removal improved his general condition. We catheterized the ureters and obtained pure cultures of the colon bacillus from which a vaccine was prepared. Much to our surprise the hematuria ceased entirely; the man gained several pounds in weight and is able to carry on. In the year, he has had several relapses but they were of short duration. Similar infections have been caused in animals by injecting cultures made from infected teeth of patients with kidney infections. It is a question whether the streptococcus may or may not have been responsible. It is difficult to say which type of organism is hemolytic and which is not, as they are called hemolytic simply for convenience. It is a question whether or not they are responsible for nephritis of the hemorrhagic type, and so the problem of obscure hematuria is of great importance.

DR. A. I. FOLSOM, Dallas, Texas: A patient under my observation a few years ago had the most extensive varicose veins I have ever seen. His lower limbs, lower abdomen, scrotum and penis were the sites of marked varicosities. We located the hemorrhage as coming from the right kidney. We watched him carefully and after the bleeding had shown no evidence of stopping we operated to check the hemorrhage, and found one of the most beautiful examples of varicose condition of the pelvis and ureter that I have ever seen. One of the ureters had ruptured into the pelvis and was bleeding profusely at that time. Two other cases of obscure hemorrhage confused me for a while. Two women had a mild bladder irritation and hemorrhage that had lasted for several days. Cystoscopic examination revealed nothing wrong in the bladder. The ureters were both normal, and clear urine was seen coming from both. They were catheterized, and perfectly normal urine was obtained, except for an occasional red cell. Later on, I made a urethroscopic examination at different times, within three or four months, and found inflammatory lesion in the urethra and the hemorrhage coming from this location. I was unable to explain how a hemorrhage originating in the urethra in the female would find its way back into the bladder; but after, a study of the anatomy of the female urethra, I am convinced that it is possible, and I am sure that I am right in my assumption that we have practically the same mechanical contrivance in the female as in the male. There are two very well defined sphincters of the female urethra, as in the male, and blood originating between those sphincters will flow back into the bladder and be voided with the urine.

DR. A. RAYMOND STEVENS, New York: I was prompted to offer a paper on this subject by the interesting group of cases, which impressed me with the fact that obscure hematuria is often proved ultimately to be due to one of the usual causes. It seemed to me that we should discourage a diagnosis of essential or idiopathic hematuria as it might give one some degree of smug confidence and deter the proper continuance of examination aimed at an anatomic diagnosis. When I began looking the subject up more carefully, I was simply overwhelmed by the number of etiologic factors one could suspect; many of these have been mentioned but the paper is too long to read completely. For that reason I could not refer to all the things spoken of in the discussion; for instance, whether one should use ureteral catheterization and various forms of irrigation of the pelvis. I do not see why we should not; and if we give relief in that way, very well. But do not give the patients a definite diagnosis; keep them under observation. As to when we should do an exploratory operation, that is a question of individual judgment. It is hard to decide without referring to a special case. We know very well that in many operations in which nothing more is done than exposure of the kidney, patients have been relieved for a long time, but their cases have not been diagnosed. Two or three years ago Strauss discussed thoroughly the etiology of renal bleeding. He was so convinced of the importance of congestion and increased tension that he used the title "Congestive Pain and Congestive Hemorrhage of the Kidneys." He thinks these factors explain why many renal hematuria patients have apparently recovered after the capsule has been stripped from the kidney; he believes there is a small bleeding point which ceases bleeding on relief of the pressure. Dr. Quimby's paper I mentioned. I regard it as a very important contribution. The case Dr. Thomas reported some years ago was along this same line; and I have just added one more. All of these cases had had the offending kidney removed and gone over very carefully, grossly and microscopically.

BLINDNESS IN MISSOURI

AS REVEALED BY EXAMINATIONS UNDER THE STATE BLIND-PENSION LAW OF 1921 *

H. D. LAMB, M.D.
ST. LOUIS

A constitutional amendment, "providing pensions for the deserving blind in Missouri," was passed by popular vote in the general election of November, 1920. The working details of the act were drawn up and passed by the state legislature and approved by the governor in March, 1921. It was required that each pensioner should be 21 years of age or over, that he or she should have been a resident of Missouri for at least ten years or have lost his or her sight while a bona fide resident of Missouri, that he or she have an income from all sources of not more than $780 per annum and that the vision in either eye must not be better than 20/450, with or without correcting lenses.

The supervision and direction of working this act was very wisely put into the hands of the well-organized and most efficient Missouri Commission for the Blind, which accordingly prepared a two-sheeted application form, on the third page of which the oculist was requested to set down the vision of the applicant, the cause of blindness and whether or not there was any probability of curing the blindness by treatment.

On the consulting staff of the Missouri Commission for the Blind, there are 104 specialists, scattered over the state, either engaged exclusively in eye work or in eye, ear, nose and throat work. Of this number, 60, or 58 per cent., practice in the five towns, St. Louis, Kansas City, St. Joseph, Springfield and Joplin, the population of each of which is greater than 30,000. In other words, we have 58 per cent. of the eye specialists practicing in the midst of 37 per cent. of the population of the state, and it was not long until this state of conditions made itself felt. Complaints began to increase in number and intensity that, in certain cases, the blind

* Read before the Section on Ophthalmology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

did not possess sufficient means to travel long distances, with a guide, to an oculist; others again were badly crippled or bedridden. In consequence of this, an amendment was added to the Blind-Pension Law, at an extra session of the legislature in July, 1921, wherein it was specified that the commission for the blind should appoint a general physician to examine pension applicants in each county where there was no eye specialist. Needless to say, this procedure was carried out under protest by the commission. Of course, this examination of eyes by the general physician invalidates the value of the pension-roll for statistical purposes, at least in regard to the causes of blindness.

We have to report the cause of blindness, vision, age and sex in 3,910 persons, which was the number of applicants granted the pension of $25 a month, up to about February 1, 1922. Of this number, 347, or 9 per cent., were examined as to their ocular condition and vision by general physicians. In spite of this rather small proportion, the record of the causes of blindness in those examined by general physicians is kept separate in this census from the record of the remainder, examined by eye specialists.

No accuracy is claimed for the following statistics; for obvious reasons, they can serve but as indicators of the causes of blindness in Missouri. At their worst, however, they are superior to the federal census of the blind (those with vision of about 20/100 or less), which, in 1920, gave 2,500 as the number of blind of all ages in this state. How much discrepancy there is in the government census is realized when we remember that in the present statistics only those persons are included whose age is 21 years or more and whose vision is 20/450 or less. Of these, there were at least 4,000 in Missouri, in 1921. Therefore, we claim that the present statistics of blindness are the best that we have to date for this state.

The present statistics were collected and summarized by counties. Missouri, with a population of 3,400,000, is divided into 114 counties and the city of St. Louis. The latter, with a population of 773,000, and Kansas City, with 324,000, make up a fairly large urban community. The amount of blindness to the population varies in the different counties from one blind person among 2,960 persons to one blind among 307 persons. In the city of St. Louis, the ratio is 1 to 1,393 and in Kansas City, 1 to 1,754.

Since in many cases the cause of blindness in one eye is different from that of the other eye, it is necessary, in order to avoid using fractions of ½, to keep account of the cases in terms of single eyes. The percentages in Table 1 (that of the causes of blindness) represent the relation of cases of one cause of blindness examined by eye specialists to all the cases in the census examined by eye specialists. The latter number is 3,910 minus 347, equaling 3,563 cases; or, in terms of eyes, 7,126—the total number of eyes examined by eye specialists.

In addition, there are two eyes each with nodular keratitis, proliferating retinitis, retrobulbar neuritis, embolism of the central artery, postocular amaurosis, wood alcohol poisoning and blastomycosis, and lastly three eyes reported blinded by cancerous growth.

It is deplorable that the most frequent cause of blindness in Missouri is trachoma, a disease that is curable, at least when treatment can be started at all early. It is significant that trachoma was the cause of blindness in about 3.6 per cent. of the blind-pensioners in St. Louis and 3.2 per cent. of those in Kansas City, while in several of the counties trachoma as the cause of blindness ran as high as 50 per cent. If the state is divided into north and south halves equal in population, the southern half is found to contain 64 per cent. of the cases blinded by trachoma, leaving the northern half with the remaining 36 per cent. This is computed only from cases examined by eye specialists.

In the case of those blinded by cataract, there at once arises the question whether many of these are not operable. Undoubtedly, in many, operation should be performed, but unfortunately there was no provision in the pension law making it compulsory to submit to operation before receiving the pension. The reason, however, why many of both trachoma and cataract cases were not remedied is probably that, living in the country or in small towns at long distances from a specialist, those persons so afflicted did not possess sufficient means to obtain the proper attention. This is where the prevention of blindness, if it is to count for anything, will have to begin. In St. Louis and Kansas City, the percentage of blindness caused primarily by cataract is found to be 7.8 and 9 per cent., respectively; there were certainly some persons in these two places who refused operation, although conditions were altogether favorable for it.

TABLE 1.—CAUSES OF BLINDNESS

	Eyes Examined by Oculist Number	Eyes Examined by General Physician Number	Cause of Blindness Per Cent.
Trachoma	1,406	140	19.7
Cataract	1,131	190	15.9
Optic atrophy	976	36	13.7
Corneal ulceration	785	96	11.0
Glaucoma	741	70	10.4
Uveitis	462	21	6.5
Simple trauma	330	21	4.6
Trauma with sympathetic ophthalmia	132	2	1.8
Chorioretinitis	204	..	2.8
Ophthalmia neonatorum	163	11	2.3
Pigment degen. retina	119	6	1.7
Progressive myopia	78	2	1.1
Optic neuritis	82	14	1.2
Congenital malformations	39	..	0.8
Congenital cataract	43	2	0.6
Retinal detachment	30	1	0.4
Acid, lime and lye burns	30	2	0.4
Parenchymatous keratitis	14	..	0.2
Miscellaneous burns	11	..	0.2
Keratoconus	15	2	0.2
Pterygium	9	2	0.1
Essent. shrink. conjunct.	8	..	0.1
Amblyopia ex anopsia	8	..	0.1
Hemorrhagic retinitis	7	2	0.1
Albino	6	..	0.1
Albuminuric retinitis	6	2	0.1
Fundus condition (obscured by lens changes)	82	3	1.2
No diagnosis	179	68	2.5

Optic atrophy in contradistinction to trachoma is a disease most frequent in the cities. Accordingly, in St. Louis, we find 22.6 per cent. of the blindness due to optic atrophy, and in Kansas City, the percentage is 24.8. This was by far the most frequent cause of blindness in these two cities. The care of the specialist, though easily obtained in the cities, evidently did not prevent the amount of blindness there from glaucoma being greater than in the rural districts. Perhaps there is more glaucoma in the cities. In St. Louis, 14.7 per cent. of blindness was caused by glaucoma; and, in Kansas City, it accounted for 15.7 per cent. of the blindness.

Among the traumatic causes of blindness, there are recorded 137 eyes blinded by explosions, almost all of which were industrial accidents. Here we find also gun shot, accounting for seventy-six blind eyes. Seventeen ocular injuries from knife wounds appear,

thirteen of which were attended with the loss of the uninjured eye from sympathetic ophthalmia. Among fifteen injuries to the eye from nails, there are eight cases of sympathetic disease; a stick was the destructive agent in sixteen accidents to eyes, in seven of which sympathetic disease occurred.

Earnest efforts were made to get accurate diagnoses on many of the cases summarized in the last two places (that of evident "fundus disturbance obscured by lens changes" and "no diagnosis"). That many of such attempts were without avail is strikingly evident.

The total number of blind pensioners, 3,910, divided according to vision, is presented in Table 2. This table would rather indicate that there were but few of the blind not entitled to the pension from the standpoint of sight.

TABLE 2.—VISION

Vision	Number of Cases	Percentage of Cases
0 and light perception	2,578	65.9
Light perception to 10/450	972	24.9
10/450 to 20/450	360	9.2

The 3,910 blind adults are divided according to age in Table 3. We see from this table that the majority of blindness in Missouri occurred in individuals past 60 years of age, for the number of blind past 60 years are 58 per cent. of the whole. This, of course, is no surprise, since cataract and glaucoma are principally confined to the years of later life, not to speak of many other causes not confined to any age.

TABLE 3.—AGE

Age	Number of Cases	Percentage of Cases
From 20 to 30 years	193	4.9
From 30 to 40 years	329	8.4
From 40 to 50 years	493	12.6
From 50 to 60 years	626	16.0
From 60 to 70 years	920	23.5
From 70 to 80 years	835	21.4
From 80 to 90 years	438	11.2
From 90 to 100 years	66	1.7
100 and over	10	0.3

Lastly, the 3,910 subjects of our study are arranged according to sex, in Table 4.

TABLE 4.—SEX

Sex	Number of Cases	Percentage of Cases
Male	2,161	55.3
Female	1,749	44.7

The greater number of males is doubtless accounted for by the fact that syphilitic optic atrophy and injuries are much more prevalent among those of the male sex.

It is earnestly hoped that this brief outline of statistics of the blind will be of some value in helping with what we are all interested in—the prevention of blindness.

Is it too much to expect that these figures may have more than local value? In this country, we have practically no statistics on large numbers of blind in which the causes of blindness were determined by eye specialists.

Applicants for the Missouri blind-pension are still (March 10) appearing at the rate of about ten a day, so we hope in the near future to add to the foregoing statistics.

826 Metropolitan Building.

ABSTRACT OF DISCUSSION

DR. JOHN GREEN, JR., St. Louis: An applicant for a pension must first make out a statement relative to his financial condition, and inquiries of various kinds have to be answered. After certification by a probate judge the patient is submitted to the oculist. The vision cannot be better than 20/450. How that arbitrary figure was arrived at no one seems to know. The cause of blindness must also be stated. That this has not been done invariably is unfortunate from a statistical point of view. The oculist must also state whether there is possibility of curing the condition. When this law was first passed, the Missouri Commission for the Blind selected a number of oculists to form the nucleus of a consulting staff. These men met and decided that the staff must be greatly enlarged in order to cover the entire state. In order that the examiners should be qualified, it was decided that new members should be required to have membership in the Section on Ophthalmology of the American Medical Association, in the American Academy of Ophthalmology and Oto-Laryngology, in the American College of Surgeons, or in the American Ophthalmological Society, or should hold a certificate from the American Board of Ophthalmic Examiners. Thus most cases examined by oculists have been properly diagnosed. Unfortunately, for political reasons and also because of the fact that some of the counties contained no oculist, the legislature later authorized the appointment of some general practitioners to examine. The evils of this practice have already come to light. For instance, you will find that oculists determined the cause of blindness to be chorioretinitis in 204 cases. In no case examined by a general practitioner was the cause so designated. It is very evident that the general practitioner often guessed at the diagnosis, and consequently such diagnoses are worthless for statistical purposes. Furthermore, the general practitioner is often unable to differentiate a malingerer from one genuinely blind, and hence the taxpayer does not get a fair deal. At the present time nearly 5,000 blind are on the rolls, and that means that practically twice as many blind persons reside in the state of Missouri as were supposed to live here on the basis of the 1920 census. This indicates that federal statistics on blindness all over the country are at fault. This is not surprising. When the census enumerator comes to a house, the family try to conceal the fact that there is a blind person in the family. On the other hand, when there is a chance to increase the family income the tendency is the other way—to magnify the degree of blindness. It is interesting to note that trachoma heads the list of the causes of blindness. It is well known that in southern Missouri and northern Arkansas trachoma is very prevalent. Cataract comes second on the list. Of course, a vast majority of senile cataracts are operable and vision can be restored, but the patient is under no compulsion to submit to operation, and it seems rather unfair to the taxpayer to compensate a person whose blindness is remediable. I am not surprised at the large incidence of optic atrophy. It has been my experience that among negroes especially optic atrophy is a common cause of blindness. In Missouri there is a large negro population largely concentrated in St. Louis and Kansas City. It is gratifying to find that ophthalmia neonatorum is tenth on the list, and that the incidence is far below the 10 per cent. which we were formerly told was the incidence throughout the country. No doubt this is due to the widespread propaganda in relation to the prevention of blindness from this cause.

DR. E. C. ELLETT, Memphis, Tenn.: It seems to me that the point in this paper that ought to impress us most is the fact that the diseases at the top of the list are preventable causes of blindness. My sphere of activity overlaps that of the physicians of this city, and I can corroborate from my own experience what has been said in regard to the prevalence of trachoma in northern Arkansas and southern Missouri. The main thing, however, that I would like to emphasize is glaucoma as a cause of blindness. As far as my experience goes, I see many more cases of blindness from glaucoma than from any other cause. The most useful work we can

do is to increase our efforts along the line of educating the people in regard to these preventable causes of blindness, especially trachoma and glaucoma. Simple glaucoma is a disease of insidious onset and has frequently developed to a very disastrous point before the patient comes for consultation in regard to his sight. That is not so liable to be true of trachoma, except when the person is in a remote part of the county, because his trouble is painful and it causes symptoms which would lead him to seek advice. In glaucoma, however, people are not disposed to seek advice at a time when anything can be done. I have been much impressed with the number of people who have lost one eye from glaucoma and yet who let the other one go before they ever think of trying to find out whether anything can be done. It seems to me that education would bear excellent results.

DR. HAROLD BAILEY, Springfield, Mo.: I want to emphasize the point Dr. Ellett made about glaucoma. There is another side to which I would call attention. Many of our pension applicants who were blind from simple glaucoma have had a diagnosis of cataract made by the optician or family physician. They had been told that they must wait until totally blind before their sight could be restored by operation. Some of them have come to us prepared to have the operation done. Another thing that has impressed me strongly in our pension work has been the apparent ignorance of some of these applicants. So many persons with mature uncomplicated cataract who could be operated on with every prospect of success refuse operation absolutely. I have observed the same thing in many cases of corneal opacity in which useful vision could be obtained by an optical iridectomy. With one exception these patients have all refused operation, notwithstanding the fact that they have been told that no expense attached to the operation other than a moderate hospital bill and in some instances we have offered to pay that. It is a question of educating many of these people before we can do very much for them. One or two points regarding the law. I do not know how much jurisdiction the examiner has. A person came to me the other day with a retinitis pigmentosa—vision of 20/70 in each eye. He had vision in his central fields only and was practically blind. Under the strict interpretation of the law this man was unable to get a pension. I would like to ask Dr. Lamb whether in such a case the applicant might not secure a pension, for he is certainly deserving of it.

DR. NELSON MILES BLACK, Milwaukee: In making the statistical tables, was any attempt made to determine the number of blind people who support themselves, and if so, what occupations did they follow?

DR. H. D. LAMB, St. Louis: The present blind-pension law was drawn up very hastily and a great many points were left unmentioned. In fact, what has been made into a law is but an outline. The questions of Dr. Bailey and of Dr. Black are being discussed by the Missouri Commission for the Blind and its consulting staff. The law simply stated that the income must not exceed $780 yearly for an applicant to receive a pension. There was nothing said in regard to the financial ability of other members of the family to take care of the applicant. I think the husband might have an income of a considerable sum and yet the wife with little or no income might receive a pension. That will be remedied by legislation; and also the question in regard to persons with good central sight with narrow fields. These cases have been passed when the field was 15 degrees or less, whatever the vision might have been. Effective work on the prevention of blindness depends on at least fairly accurate statistics. We have practically no statistics on blindness of any value in this country. The government census is determined by the enumerator asking as he or she goes from house to house "Are there any blind in this home?" Figures based on such methods are worth nothing, and yet the figures of the government census are referred to frequently by writers and speakers on blindness. This, of course, is because they are virtually the only statistics on blindness we have in this country. Ophthalmologists desiring accurate statistics on blindness refer back to the tables of Magnus, published in 1883, for since that time we have nothing accurate.

HEALTH CENTERS OF THE MASSACHUSETTS-HALIFAX HEALTH COMMISSION

WITH SPECIAL REFERENCE TO PRESCHOOL-AGE DENTAL CLINICS AND NUTRITION CLASSES *

B. FRANKLIN ROYER, M.D.
Executive Officer, Massachusetts-Halifax Health Commission
HALIFAX, N. S.

Health center work in Halifax and Dartmouth came about as a direct result of the ship disaster occurring in Halifax harbor, Dec. 6, 1917, when the *Mont Blanc* and the *Imo* collided. The *Mont Blanc* was loaded with trinitrotoluene, and a great explosion resulted, destroying the lives of 1,635 citizens, and wrecking several thousand dwelling houses. Practically all buildings in the two communities were severely damaged, the property loss alone amounting to $30,000,000. Immediately after the news reached Boston, citizens of Massachusetts hurried physicians and nurses to Halifax with relief and supplies. A very generous contribution of funds and supplies followed, the collection reaching almost $750,000. In addition, several shiploads and several trainloads of supplies and the personal assistance of many citizens of Massachusetts were contributed. As soon as the governments of Canada and England could visualize the disaster, and make plans to give permanent relief, a commission was formed to handle relief in an official way and pay for all loss of life, limb and property.

With the formation of the government organization, and its establishment on the ground, outside philanthropy was no longer needed. A quarter of a million dollars of the Massachusetts money remained unexpended at this time, and at the suggestion of the committee in Massachusetts, Dr. Victor G. Heiser studied local needs to determine how this large balance might be expended within the spirit of the donations, and for a need having some direct relation to the disaster. Dr. Heiser recommended that the money be employed in a campaign of public health education and preventive medicine, on condition that the government relief commission supplement it at the rate of $15,000 a year for a period of five years, and that the city of Halifax and the province of Nova Scotia each make contributions in facilities or money to the sum of $5,000 a year, the Massachusetts money to be apportioned as needed over approximately a five-year period. This was agreed to by all organizations, and a new commission, known as the Massachusetts-Halifax Health Commission, was created under a special act of the Nova Scotia legislature in May, 1919.

Dr. Heiser recommended the establishment of health centers as a part of the constructive educational health campaign. It has been my privilege to work out on the grounds the details of this supplemental health program in cooperation with the chief nurse of the commission, subject, of course, to the approval of the commission itself.

The child welfare clinics, the prenatal clinics, the ear, nose and throat services, the posture clinics, the

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of two illustrations. The complete article appears in the Transactions of the Section and in the author's reprints.

venereal clinics and the tuberculosis services are organized very much along the lines now obtaining in the best health centers in other parts of the United States. Some medical advice is given and much public health counsel is offered both by physicians and by dentists, as well as by specially trained public health nurses and nutrition workers.

Some new features, however, have been introduced in the preschool-age dental clinics, and in the nutrition clinics, that are worthy of special discussion at this time.

In making preliminary plans for a preschool-age dental clinic, we first submitted our views to the Halifax Dental Society. The Dental Committee on Public Health of this society agreed to the suggestion that the proper place for, and the place most likely to give results in, preventive dentistry was in the preschool-age group, that is, up to 6 years. This committee agreed also with my suggestion that tooth nourishment should be featured out of all proportion to what has been done in health work in other places, and that prophylactic dentistry should be practiced in cooperation with such an instructional service. While the matter was under discussion, a subcommittee secured approval of the Canadian Dental Society, and a delegate secured approval of the American Dental Association.

It is the teaching plan of these health center preschool-age dental clinics to begin featuring tooth nourishment in the prenatal period. We try to make the expectant mother appreciate that unless she takes food from which sound bone and good teeth may be built, her baby will not grow a sound, strong, well-enameled set of temporary teeth, likely to remain sound and free from decay during the period of their natural use. We teach the mother to appreciate that the first set of teeth, even to the enamel, is pretty well finished when the child is born, although the teeth are under the gums in the jaw. We preach the use of liberal quantities of whole milk, the use of all leafy vegetables, even to raw cabbage, especially during the last six months of pregnancy. We aim to have the dentist in charge of this service advise with expectant mothers and the public health nurses, as well as the physician in this prenatal service and nursing period.

We begin dentistry with the baby at 6 months, whether bottle-fed or breast-fed, and try to control the health of the baby from then until he is 6 years of age, by taking him to the preschool-age dental clinic for guidance, and to impress on the mother essential food lessons. The dentist in the clinic, and the public health nurse subsequently in the home, constantly keep before the mother the thought that, in this important period, the second teeth are being built and enameled. We urge that, unless the child is given through these years also the kind of food from which sound teeth may be built, the permanent teeth may decay at any time after complete eruption or in the early teens. We teach continuously and constantly that unless the right kind of food is taken—chiefly mother's milk the first year, and modified milk or good whole milk later and, as soon as possible, leafy vegetables, oatmeal porridge and whole wheat bread— one cannot lay the foundation for strong teeth or good lasting enamel. We emphasize in the clinic and through the health nurse and visiting housekeeper that tooth-feeding is of greater value than tooth-cleansing, but, at the same time, we teach oral hygiene.

The dentist teaches the use of the tooth brush in prophylactic work, and mechanically cleanses when necessary. With children coming to the clinic who have been improperly fed and whose mouths have been neglected, much repair work naturally is done, the sort dentists refer to as patchwork. Silver may be deposited by precipitation, both in shallow cavities that have been previously cleaned, and as a coating to teeth losing their enamel, with the hope of preserving them and keeping their value in the development of the jaw. Fillings may otherwise be put in. Sinuses and diseased gums are treated.

The whole of this dental clinic service, however, is educational rather than reparative. We teach that tooth-feeding must begin with the expectant mother and must be continued during the prenatal period. One of our slogans is: "A sanitary mouth with good oral habits at 6 is likely to remain a clean, healthy mouth at 60." We are fortunate in having a woman dentist, Dr. Arabelle Mackenzie, who has had a year of postgraduate training in the Forsythe Clinic at Boston. She is tactful in handling children, and fits in well in coordinating her work with that of the medical staff. We have given her the title of pedodontist. She now has more than 300 babies and children less than 6 years of age coming to this clinic four times a year for dental advice. The nurse during the latter half of the first year visits the baby fortnightly, and once a month, or oftener if required, during the entire preschool period.

The school dentists of Halifax have already voluntarily made special report to the school authorities of the notable changes observed by them in children entering school during the last session, who have had from one year to eighteen months in the preschool dental clinic.

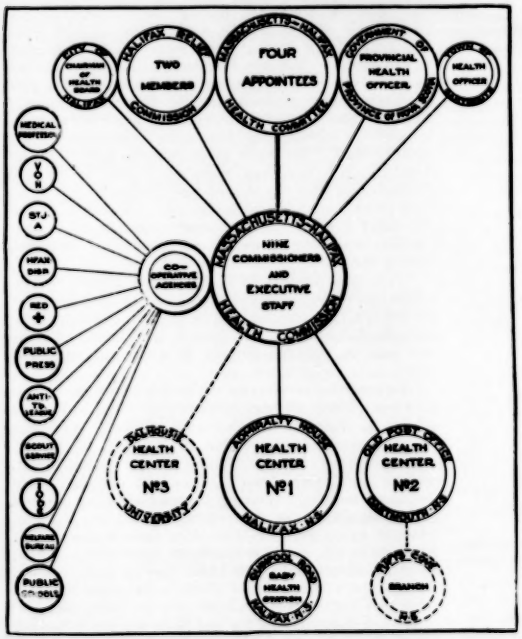
The nutrition services of the health center are organized much along the lines of Emerson's clinic in Boston, with some features of other clinics added. We have the additional advantage that the nurses', physicians' and consulting clinics, including the ear, nose, throat, posture and tuberculosis services, are operated from the same building. During summer months, adenoid and tonsil clinics are also conducted. In this way, we are able to do much as Dr. Wile does at the Mount Sinai clinic, viz., ask that handicaps be removed so that, as Dr. Emerson says, the child may be free to gain. Tonsils and adenoids must often be removed before a child may make great headway in a nutrition class.

We are fortunate in the nutrition service in having Dr. F. W. Tidmarsh in charge, a man with an excellent overseas record and a period of study in Emerson's clinic. The physician is supported by the public health nurses and visiting housekeepers (nutrition workers), who aim to correct any home environment that may be detrimental to health. When nutrition problems are paramount, the visiting housekeeper does the bulk of the home teaching, the nurse going occasionally. The visiting housekeeper is trained to go into the home and teach the housewife the kind of food the child needs in order that it may gain. Not only does she explain the kind of food that is needed, but she goes with the mother into the shop or market and teaches her how to buy economically the kind of food the family needs, and the kind the particularly undernourished child needs.

The aim in the health center is to develop only one class of the undernourished of school age, recruiting

this class chiefly from homes with open tuberculosis. This class is used for feature purposes and educational publicity. We recognize that the largest and the most desirable places for nutrition classes must be, for some years at least, in the public schools. At present there are three such classes in the Halifax public schools.

Our larger aim is to give nutrition advice to undernourished children of the preschool age. In that period, children are not so commonly 7, 10 or 15 per cent. underweight, but there is quite as much need of nutrition advice alone, or combined with the advice of a pedodontist, as in the older groups. With these classes we aim to prevent gross malnutrition.



Massachusetts-Halifax Health Commission scheme of cooperation.

I have more fully described the larger health program in other articles.[1] It will suffice here to have elaborated somewhat on the special services of preschool-age dentistry, a service hardly started in health circles, and on nutrition classes running parallel with them, an innovation in health work until recently largely limited to the school-age period.

One fully organized health center is now operating in the northern part of Halifax with a summer substation for weighing and measuring babies. A second health center, suited to the needs of a population of 8,000, is operating in Dartmouth.

The work of the first health center, when reviewed by representatives of the International Health Board of the Rockefeller Foundation, influenced them to "earmark" $200,000 for building a Dalhousie health center for the south end of Halifax. This new health center is being planned for the university as an integral teaching unit of the medical school, and will serve as an outpatient department to the group of hospitals now growing up in the immediate vicinity of the medical school. With health center service for the southern half of Halifax conducted by the medical faculty from a university building, with public health nurses on the staff, students of medicine will be given great clinical opportunities and will here for the first time be given ample opportunity to study domiciliary causes of diseases, and a chance to acquire a better fundamental groundwork for preventive medicine.

The general scheme of organization and the general plan of operation can perhaps be set forth best diagrammatically. It would be described about as follows: The commission consists of nine men, three of them being members by virtue of their offices: the provincial health officer, the chairman of the Halifax City Health Board and the health officer of the town of Dartmouth. Two are appointed by the Halifax Relief Commission and four by the Massachusetts-Halifax Relief Committee of Boston. The commission acts under a special provincial law, and meets semimonthly. Policies are determined by the commission, and work is directed through the executive officer and staff. The provincial and local health authorities are members of the commission for the purpose of coordinating the established work of each with the new work undertaken by the commission. It is the aim and object of the commission to do such lines of health work as should properly come under the local health officials in each community, and to work in the closest cooperation with all privately endowed philanthropic and charitable agencies, so that a minimum amount of overlapping will occur and waste will be avoided.

The public health nursing program is wholly constructive in character, and is a very large feature of the work. Each nurse is responsible for the entire public health program in the district assigned to her, and for the health of every member of each family with whom she comes in contact. She seeks to remove as far as possible domiciliary causes of diseases, and to train and reeducate the family in right methods of living. Bedside nursing is done in emergency only, or for family demonstrations. The Victorian Order of Nurses does the routine bedside work in homes of both communities, and gives general family instruction during such intervals.

ABSTRACT OF DISCUSSION

Dr. Isaac D. Rawlings, Springfield, Ill.: The establishment of the Massachusetts-Halifax Health Commission is somewhat unique in that it did not just happen but was the result of the mature deliberation of experts, and with all the facts furnished by a thorough survey of the needs and problems requiring solution to guide them. This commission is somewhat different from most health centers in that a

1. Royer, B. F.: Am. J. Pub. Health **12**: 195-201 (March) 1922; M. J. Australia **1**: 451-456 (April 29) 1922.

definite plan is mapped out for a five-year period with experts in charge, no politics, adequate finances, a constructive program in all its features, with no duplication of efforts or conflict of authority, and with the entire personnel having but one goal, the lessening of the sick rate and the saving of lives. While the scope and standard of the Massachusetts-Halifax commission are, perhaps, the best yet established, there are many so-called "health centers" which are attempting some or all of the activities carried on by the Massachusetts-Halifax commission. In England such institutions have been quite common. The agency through which the health center operates may be public officials, it may be volunteer organizations, or it may be a combination of the two. The scope of the services performed varies with each health center. At the end of 1917, there were only about a dozen health centers in the United States. Three years later this number had increased to 385, and at present there are still more. Binghamton, N. Y., has established a health center which is producing excellent results. Altogether, eleven activities are brought into close contact, with the result that much lost motion and a great deal of overlapping of activities have been eliminated. In New Haven, Conn., a health center has been in operation for some time which deserves special mention. The center depends largely on private donations to carry on its work. The New York County chapter of the American Red Cross has affiliated all existing health agencies and opened health centers in various parts of New York City. A rather unique experiment in health center work has been established in New York City by the International Lady Garment Workers Union. This consists of a joint board of sanitary control, a medical division, a dental division and an educational division. Every worker joining the union is required to undergo a complete physical examination. When treatment is required, this is advised and administered. In 1909 the legislature of Illinois passed an "enabling act" permitting the people of any county by referendum to impose on themselves a tax for the care of the dependent tuberculous patients in the community. At present, more than forty counties of the 102 in the state have taken advantage of this act. The extension of this principle to include the prevention and treatment of all diseases, disabilities and injuries of a community has not been advanced in Illinois. In several other states, notably Iowa, each county has the right to establish a hospital for the care of residents of the county. The highest type of county organization has been reached in New York State, where the board of supervisors of the county was allowed to establish community or health centers. The board of supervisors provides the funds for these centers, and appoints a board of managers who supervise and control the health center. A hospital in such a health center may be constructed, the state paying half of its cost, with provision that the hospital shall not be greater than one bed to each 500 of population. In Illinois, a unique health center has been in existence for some time in La Salle, Peru and Oglesby. In 1914, at the township high school of these three cities, a social center was established for welfare and community work. Included was a hygienic institute to cooperate with the departments of health in the three cities. At the head of the hygienic institute was a health officer, under whom served, in each of the cities, an assistant health officer appointed by the mayor of the respective city. This gave the organization a legal standing. The scope of work consisted of enforcement of all local and state laws pertaining to the health of the people.

DR. ANNA RUDE, Washington, D. C.: The two outstanding points for emphasis in this are, first, the small number of children considered as "malnourished" in the preschool period according to our present standards. These findings corroborate a report on the physical status of the preschool child which the Children's Bureau will soon publish, in which we have not drawn conclusions but have indicated that neither a 7 nor a 10 per cent. weight deviation from the weight-height ratio is a standard applicable to the preschool age child. The second point is the importance of prophylactic dentistry during the preschool age. As one observes dental corrections in the schools throughout the country, one must be impressed with the futility of beginning dental repair work during the school age. Of fundamental importance is research in nutritional problems beginning with the mother during pregnancy and followed throughout infancy, and with prophylactic work in the preschool age, if we are going to make any improvement in dental defects in the children of this country.

BRONCHOLITHIASIS

REPORT OF CASE *

ARTHUR R. ELLIOTT, M.D.

CHICAGO

Broncholithiasis is described in the literature under various designations. It has been called pulmonary lithiasis, and the concretions which are its characteristic product are referred to as lung calculi, pneumoliths, lung stones and broncholiths. The clinical manifestations accompanying the expulsion of these concretions constitute what is known as stone asthma or bronchial colic.

The literature is surprisingly meager, in view of the fact that the condition has been recognized for centuries and is probably not so rare as might appear from the infrequent references. Casual testimony of its occurrence as a clinical incident is not uncommon in discussions on the subject.

Roentgenograms of the chest frequently reveal more or less circumscribed nodular shadows, usually located at the hilum of the lung, which are considered to be calcified peribronchial glands. Calcified nodules in the lungs and adjacent structures are also encountered at necropsy. In interpreting the presence of these nodules, it is considered that glands and circumscribed areas of lung tissue have at one time been involved in an inflammatory process, and on this becoming quiescent, they were subsequently infiltrated with calcium salts as a terminal event. Tuberculosis, abscesses, bronchopneumonia, infarcts, foreign bodies or pleuritic infections may have initiated the process leading to calcification. It often happens that no definite primary infective or inflammatory process can be traced in the clinical history. The presence of these calcific areas is a sign of chronic disease; but, strictly speaking, no other diagnostic value can be assigned to them. So long as they remain quiescent, they do not give rise to symptoms, and their discovery is usually an accidental finding.

In the more chronic ulcerative forms of tuberculosis, small particles of calcareous matter may become loosened in the process of cavitation, or form in the stagnant mucoid contents of bronchiectatic bulgings and be coughed up from time to time. These particles are ordinarily not sufficiently gross to be detected without careful inspection of the sputum.

Calcified tracheobronchial lymph nodes, because of their size and proximity to the air passages, most frequently give rise to clinical manifestations leading to a diagnosis, since they may perforate the bronchial wall by ulceration and gain access to the lumen of a bronchus and be coughed up. Besides these glandular concretions, ulcerative processes in the air passages may result in the sloughing off of cartilages of the bronchi or of the trachea which, becoming free, may act as foreign bodies and be expelled by coughing. In like manner, enchondromas may form in the lungs or pleura and become free. Hydatids, inspired foreign

* Read before the Society of Internal Medicine, May 29, 1922.

bodies and fragments of soft tissue, after resting a time in the bronchial tract, may become more or less calcified and be finally expelled in the form of small concretions.

The stone surface may be smooth, rough or slightly mammillated. Their size may vary from that of a small bead to that of a cherry, and their consistency from hard to soft and friable. They may be white or yellowish-gray. On section, layers have been noted and also fluid in the center, as in gallstones. Foreign bodies have been demonstrated as forming the nucleus. Chemical analysis proves them to be composed principally of calcium phosphate and carbonate. On microscopic examination, bone corpuscles and lamellae have been observed. In some persons the tendency to calcareous lung deposits may be very great. This is a frequent observation during routine chest examination with the roentgen ray. It is possible that a certain constitutional anomaly never satisfactorily explained may play a part in their formation.

Morbid calcification has been generally believed to be brought about as a result of chronic inflammation. It may be assumed that a chemical process occurs in tissue, the vitality of which is reduced in this manner, whereby lime salts are deposited from the blood stream into their structure. According to Wells, the essential differences between calcification and ossification seem to be chiefly morphologic. In calcification, we have deposited in dead tissue or in tissues of low vitality a considerable quantity of inorganic calcium salts which appear at first in granular form, although later there may be more or less fusion and resulting areas of homogeneity. Within such deposits there are usually no living cells, and, so far as we know, no further changes take place unless it be absorption or addition of more calcium salts. In calcification and ossification alike the insoluble lime salts are laid down in a matrix especially prepared to receive them: in bone formation, the homogeneous acellular matrix of the cartilage; in calcification, some acellular necrotic tissue.

Chemically, the resemblance is very close, for with few exceptions the proportion of the different inorganic salts in pathologic calcific deposits has been found to be quite the same as that characteristic of normal bone. Furthermore, Wells states it to be the rule that when areas of calcified pathologic tissues remain long enough in the body, ossification will take place in a certain proportion of cases, irrespective of any proximity or relation to bone tissue. Numerous observations are on record in which true bone has been found in calcified nodules from the lungs and in similar areas in liver, eye, mesenteric glands, etc. The composition of bone and of most pathologic deposits of calcium exhibits an almost constant ratio of from 85 to 90 per cent. of phosphate and from 10 to 15 per cent. of carbonate. Calcium is carried in the blood in amounts not far from the saturation point, being held in solution by the colloids and carbon dioxid. The same blood that furnishes the calcium salts to the calcifying tissues is also passing and repassing through great areas of capillaries within true bone tissue where there are large amounts of calcium phosphate and carbonate that are in practically constant proportion. In both the normal and the pathologic tissues, calcium is being given off or taken up from the surrounding fluids according to the laws of solution tension and of chemical and osmotic equilibrium. It is inconceivable that a mass of calcium salts anywhere in the body can for long possess a chemical composition essentially different from that of bone, with which it is in constant exchange through the medium of the circulating blood.

Pathologic calcification is not to be confused with metastatic calcification. In the former process, some devitalizing tissue injury leads to the deposition of calcium at the point affected. In metastatic calcification there is a widespread deposition of calcium salts occurring independently of any specially prepared abnormal tissue matrix, but in consequence of bone disease, such as osteomalacia, osteosarcoma or myeloid leukemia. As a result of bone destruction from such causes there is an excessive liberation of calcium, with oversaturation of the blood and deposit in the soft tissues. One of the striking features of pathologic and metastatic calcification is the predilection of the lungs for lime deposits. An explanation for this, according to Wells, may lie in the fact that the lungs constitute one of the three chief places (the others being the stomach and kidneys) where acids are excreted and where, in consequence, the tissue fluids become most alkaline and least capable of holding calcium in solution.

Apart from and apparently independent of this implication of the lungs in metastatic calcification, these organs have been found diffusely infiltrated with lime so that they cut with difficulty, and feel like porous bone, as in a case reported by Harbitz. No satisfactory explanation for this rare condition is forthcoming. It appears to result from an obscure constitutional anomaly or metabolic disturbance of the same order as myositis ossificans progressiva and calcinosis universalis.

Much more common than any other form of lung concretion is the variety resulting from calcified tracheobronchial lymph nodes, which, because of their proximity to the air passages, may perforate the bronchial wall by ulceration, and so gaining access to the lumen of a bronchus, be discharged by coughing. This is the variety which most frequently gives rise to clinical manifestations leading to a diagnosis of bronchiolithiasis. Only one stone may be expelled, or successive discharges at variable periods may eventually produce large numbers, constituting a clinical syndrome fully justifying the designation. Calculi originating in this manner are more likely to be branched and ragged in outline and of larger size than when formed in cavities or in the lung tissue.

The clinical aspects of lung concretions possess no characteristic feature except the expulsion of the stone and the disturbances that accompany its discharge. So long as the stone remains quiescent no symptoms due to its presence arise, just as in calculus elsewhere in the body. When the calculus becomes the center of active irritation or inflammation, symptoms of more or less severe character appear resembling those produced by a foreign body in the bronchus. There are cough, frequently severely paroxysmal in type, asthma-like wheezing, profuse bronchorrhea, dyspnea, chest discomforts varying from a sense of pressure to intolerable burning and scratching sensations, and even severe localized pain. Finally, following a severe fit of coughing, with rending pain or a sense of tearing within the chest, the stone is expelled and great relief is experienced at once. This has been called "stone asthma," and by the French "colique bronchique." Such attacks pass very quickly or may last a day or two. Hemoptysis results from the ulcerating through of glandular

V. 192

concretions, and usually precedes and accompanies the expulsion of a stone of any size.

Some of the cases assume from the first a chronic form which may suggest tuberculosis. The earlier writers aptly described this form as "pseudophthisis calculosa." In most chronic cases, bronchiectasis forms, or lung abscess with all the attendant possibilities. Repeated expulsion of stones may occur, or their presence may not come to light until accidentally discovered at necropsy.

Fig. 1.—Fifty-six of largest-sized bronchial concretions expelled in the case reported. Reproduction is about half the actual size.

The physical signs arising from broncholithiasis are not such as to lead to a correct diagnosis. They are usually unilateral, and resemble those arising from bronchiectasis, lung abscess or a foreign body. In no case so far recorded has the roentgen ray succeeded in revealing the presence of free stones in the bronchi. The true diagnosis becomes apparent only when a stone has been expelled. Should this occur, the only question to be decided is where it has come from. Calcareous masses have been known to collect about the teeth or form in the tonsillar crypts and pouches of Morgagni, to be subsequently spat up. If coryza is present, one must think of a rhinolith which, coming from the nasal cavity, may enter the mouth and be expectorated during a fit of coughing.

Broncholithiasis is probably more frequently present than is appreciated, and may account for certain obstinate cases of chronic cough. Were bronchoscopy more frequently employed in diagnosis of obscure chest conditions, it might more frequently be brought to light.

The following case history illustrates the clinical aspects of this disease. The case constitutes an instance of multiple glandular ulcerative broncholithiasis.

REPORT OF CASE

History.—A structural engineer, aged 35, whose normal weight in health was 178 pounds (80 kg.) and who, since the beginning of the present illness, had lost 20 pounds (9 kg.), had had pneumonia at the age of 8 years, epidemic influenza in 1918, and bronchopneumonia in February, 1920, resulting in confinement lasting three weeks. His present illness began in August, 1920, with loss of weight and decline of endurance. This was attributed by the patient to loss of sleep and irregularities of living incidental to severe professional demands. Increasing weakness presently compelled him to stop work. His digestion became much upset, and for a period of eleven weeks he was confined indoors. About midway of this period of confinement he developed a cough. This developed without fever and was productive from the start. After it had lasted with increasing severity for one month, he coughed up a small concretion about the size of a grain of wheat, the sputum being purulent and tinged with blood. Following this he coughed up similar concretions almost daily for several days, and thereafter every three to seven days until they numbered in all fifteen, of about uniform size. Gradually the cough became less persistent and stone expulsion less frequent, although they were of larger size. The cough has continued with abundant mucopurulent expectoration, and until the present date stone expulsion has occurred about once from every two to four weeks until they now number sixty in all (Fig. 1). Their combined weight is 2.4 gm. The largest concretion is irregular, somewhat porous, ragged and branched, measures 1.3 by 1.1 by 0.7 cm., and weighs 0.52 gm. There is distinct clubbing of the finger tips.

Laboratory Findings.—Repeated sputum examinations have in all instances failed to reveal tubercle bacilli. The bacterial flora consists of pneumococcus, staphylococcus and *Micrococcus catarrhalis.* Many pus cells are present. No elastic tissue has been found in any sample. Blood counts reveal a moderate grade simple anemia. The blood Wassermann reaction is negative. Urine analysis is normal in all respects. Estimation of blood calcium reveals a percentage of 0.0094, which is slightly below the normal figures of from 0.0110 to 0.0131 given by Abderhalden.

Cough and Phenomena Attending Expulsion of Stones.—Cough is persistent, although somewhat paroxysmal, with maximum severity during the early morning hours. When at its worst, there is much wheezing and annoying mucus rattling in the chest. Seldom is the patient free from sensations of discomfort in his chest, and he refers to a point inside the lower third of the right scapula, where there is a burning pain. For several days before a stone is expelled, he experiences at this point a very annoying tickling and itching sensation, and he appears to be able to trace the movement upward of the stone along the right side of the spine and neck until, in a final paroxysm of convulsive coughing, it appears in the sputum. There is always a slight fever and repeated mild chills during the periods of stone asthma. The cough is at all times productive, and the sputum is purulent and often blood tinged. During the exacerbations attending stone expulsion, the sputum is markedly increased in amount and frankly bloody. At no time has it become malodorous or putrid. A single twenty-four hour measurement yielded 6 ounces of heavy, purulent sputum.

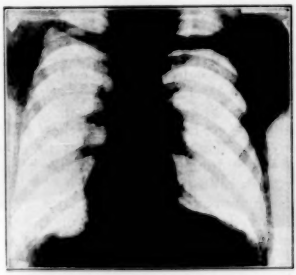


Fig. 2.—Appearance of chest two weeks before expulsion of largest concretion.

Physical Signs.—The chest is well formed and symmetrical, and expansion is equal on the two sides. On deep breathing, the palpating hand detects coarse mucous fremitus over the right chest, maximal over the right scapular region. Percus-

sion resonance is exaggerated throughout. Auscultation reveals many coarse, vibrating, snoring mucous râles, most numerous and intense over the lower right chest behind. Mucous sounds over the left side seem muffled, as if mainly transmitted from the opposite lung. Toward the inferior margin of the right lung there are fine, crackling râles which clear on coughing. The breath sounds are coarse, but otherwise unchanged.

Roentgen-ray examination does not detect any upper lobe consolidation; toward the bases there is only a moderate thickening in the distribution of the structures emanating downward from the hilum. On each side the hilum structures are definitely increased. The radiations from the hilum outward and upward are not thickened. There are a few rather insignificant nodules of calcification in relation to the right hilum, but certainly less than might be expected from the history of frequent stone expulsions. From the standpoint of bronchiectasis, the roentgen ray discloses less pulmonary consolidation than might be expected from the quantity of expectoration. No real cavities are shown.

Within two weeks after the plate reproduced in Figure 2 was made, the patient coughed up the largest stone expelled. It weighed 0.52 gm., was rough and was somewhat branched. It will be seen that the roentgen ray failed to detect this concretion, although it undoubtedly was present in the chest at the time of examination.

Progress of Case.—During the ten months since the patient came under observation, twelve calculi of varying size have been expelled. The cough is persistent and unabated, and the character of the sputum unchanged. The body weight has increased by 8 pounds (3.6 kg.), with some improvement in general health and endurance, enabling the patient to pursue his professional activities without interruption.

The physical signs remain unchanged in character, and a roentgenogram, made later, gave no additional information.

Fig. 1.—One hour after the meal. Figures 1, 2 and 3 are reproductions of roentgenograms of the stomach and pylorus taken, Oct. 25, 1921, before atropin had been administered.

COMMENT

This case of broncholithiasis appears to constitute an instance of multiple calculi of glandular origin which penetrate the bronchi by ulceration and are expelled singly with characteristic phenomena of stone asthma or bronchial colic. Chills, fever, hemoptysis and chest pain accompany each expulsion. There appears to be no bone disease present; tuberculosis is excluded, and blood calcium concentration does not exist. The primary etiologic factor remains a matter of doubt. Pneumonia at the age of 8 and "influenzal bronchopneumonia" seven months before the first stone expulsion may be concerned in the pathogenesis. There appears to be in this case, as in other chronic forms of pathologic calcification reported, a morbid constitutional tendency to the laying down of calcium salts at a point least capable of holding them in solution.

30 North Michigan Avenue.

Cinchona Bark in the British Empire.—The special committee on cinchona bark of the Imperial Institute Committee for India in a recent report stated that during the five years ending 1916-1917, Indian exports of cinchona bark averaged 600,000 pounds per annum; in 1917-1918, they fell to 40,000 pounds, and in the following two years were 27,000 and 198,000 pounds, respectively. These exports consist chiefly of druggists' bark, that is, barks of cinchona succirubra, officinalis and robusta. The annual requirements are 8,000,000 pounds, of which nearly 7,000,000 pounds are now derived from foreign sources, principally from Java.

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS AND ITS TREATMENT BY ATROPIN *

SIDNEY V. HAAS, M.D.
NEW YORK

When the etiology of a disease is uncertain, the treatment of that disease is bound to be in question. So it is that pyloric stenosis has had different forms of treatment advocated for its cure, depending on the point of view held at the time.

Recently medical treatment alone was practiced, until the brilliant results of Downes and those following him, by means of the Rammstedt operation, showed the cures which could be obtained by surgery, with the result that now operation alone is advocated, and medical treatment is supposed to have no place. Such a state of affairs must prevail so long as the results of treatment are the only criteria on which judgment can be founded.

To have seen and felt a pyloric tumor such as exists in this condition is sufficient excuse for any one to hold that nothing short of surgery can possibly relieve the existing stenosis. When added to this the histologic picture shows such great hypertrophy of muscular tissue, especially of the circular layer, it is difficult to give any other view credence.

I shall endeavor to show that this attitude is incorrect; that the etiology of this disease is one which makes it a medical problem, and that we possess in atropin a drug which may be properly termed a specific in its curative action.

I hold as my thesis that so-called hypertrophic pyloric stenosis is merely an advanced degree of pylorospasm, and is only a single manifestation of a general state whose etiologic factor is an overaction of the vagus portion of the autonomic nervous system, and usually a hyperexcitability of all the motor functions.

Somewhat more than six years ago my attention became attracted to a condition in infants which manifests itself by hyperexcitability of the entire muscular system, not only the striated but also the unstriated. The chief symptoms are those of muscle spasm, as seen most characteristically in tetany, including in severe cases marked opisthotonos. When these infants are lifted by the hands, the forearms remain at right angles to the arms instead of being raised above the head. They stand on their feet, requiring only enough support to balance them. Colic, visible peristalsis, both gastric and intestinal, constipation, vomiting, sleeplessness and constant crying make up the picture, to which is added, in some cases, instability of the vasomotor system, as shown by cyanosis of the circumoral region, cold, clammy hands and feet and subnormal temperature, and inability to make progress on any form of feeding. Atropin corrects the condition. I[1] described this in 1918 under the title of "The Hypertonic Infant." Included in this group were cases of

* From the Pediatric Department of Lebanon Hospital.
* Read before the Medical Society of the Greater City of New York, April 20, 1922.

1. Haas, S. V.: The Hypertonic Infant, Am. J. Dis. Child. **15**: 323-335 (May) 1918.

pylorospasm. There was nothing new in either the description of the condition or its treatment by means of atropin. It had been variously spoken of as myotonia, myotonia spastica perstans, arthrogryposis, essential contractures, pseudotetanus, tetanoid conditions, infantile tetany, spasmophilia, vagotonia, etc. But, curiously, no one carried these ideas to their logical conclusion until Eppinger and Hess [2] tried to do this and attained a high degree of success. Their failure to use atropin in sufficient doses, however, interfered with their success.

Experimental work in this field has always added proof that the etiology of this state lies in an unbalance of the autonomic nervous system.

Let us now take up the problem of congenital hypertrophic pyloric stenosis, which henceforth in this paper will be referred to as pylorospasm. This will be considered under two heads: (1) etiology; (2) treatment.

ETIOLOGY

This, as previously stated, is held to be a disturbance in balance of the autonomic nervous system; specifically, an overaction of the vagus portion.

The following facts are offered in support of this point of view:

1. These cases can be cured by means of atropin. There may be exceptions. If there are, I myself have not encountered them.[3]

2. The tumor that exists contains no foreign tissue, nor is there any fault in the arrangement of the cells; there is only hypertrophy of the muscular fibers, especially of the circular layer.

3. Necropsy months after cure by means of the Rammstedt operation has shown complete absence of the tumor that existed and was palpated and measured at the time of operation.[4]

4. Herczel,[5] in experimental occlusion of the bowel, found that hypertrophy of the muscular coat becomes manifest histologically as early as the fourth or fifth day, and that on the ninth day the hypertrophy of the muscular coat is distinctly pronounced and easily recognized.

5. Patel [6] found that in many cases in which the lumen of the intestine is narrowed by pressure from without or by innocent tumors, such as multiple polypi, from within, the bowel above the point of stricture is dilated but not hypertrophied unless there is ulceration, showing that there is some element in the intestinal wall which must be attacked before hypertrophy can occur.

6. When the serous coat of the intestine was irritated by means of a crystal of sodium chlorid, the lumen of the intestine disappeared completely and the bowel was converted into a hard, round, solid cord, pale in color, showing entire change in appearance and form from disturbance of function, by irritation alone.[7]

7. Lead colic is rapidly and completely relieved by atropin. Mosse [8] produced symptoms corresponding to lead colic by injections hypodermically of lead acetate and found marked changes in the ganglion cells of the abdominal sympathetic ganglions.

8. Pfaundler [9] found that an entirely normal pylorus may remain contracted postmortem, assuming the consistency of an annular tumor with apparently hyperplastic walls, narrowing the lumen almost to obliteration.

9. Strauss [10] reports that at operation on patients with pyloric stenosis the size of the tumor bore a direct relation to the length of time the condition had existed.

10. I have produced by means of atropin administered to infants for pylorospasm a spasm of the sigmoidorectal sphincter in all respects analogous to the pyloric spasm, causing complete obstipation and severe tenesmus, with expulsive efforts so violent as to produce distention of the perineum, making it resemble the perineum in labor when the oncoming head presses on it. Examination at this time reveals an empty rectum and a tight sigmoidorectal sphincter, resembling with its sharp edges nothing so much as the circular diaphragm shutter of a camera. This and the obstipation are promptly relieved by omission of the atropin. I have also seen this condition in two cases in which atropin had never been used.

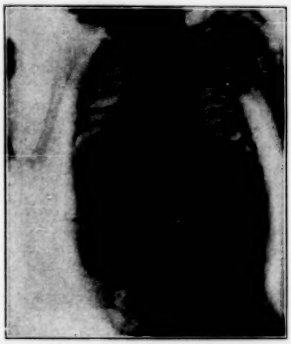


Fig. 2.—Two hours after the meal.

Since in this region the controlling innervation is the sympathetic, this may account for the condition arising when the vagus function is abolished by atropin.

As further proof that the obstruction in this condition is not organic is offered: (*a*) the reports of spontaneous cures; (*b*) cures by various forms of feeding, such as thick gruel feeding; (*c*) gastric lavage; (*d*) subcutaneous saline transfusion; (*e*) rectal instillation of Ringer's solution; (*f*) various sedatives, such as atropin, papaverin or benzyl benzoate; (*g*) alkalis, and (*h*) nonoperative divulsion of the pyloric sphincter.

The differential diagnosis between spasm and hypertrophic pyloric stenosis presents such hopeless difficulties that this fact alone may justifiably be adduced as proof that the two are merely phases of one condition. Until the present moment there has been no single sign that will permit of a differential diagnosis, not even a complete four hour gastric retention, diagnosis resting entirely on the clinical course.

The symptoms of pylorospasm with stenosis as usually given in textbooks are too well known to warrant more than a recapitulation: projectile vomiting, visible gastric peristalsis, constipation with starvation stools, rapid loss of weight and often pyloric

2. Eppinger and Hess: Vagotonia, Nervous and Mental Diseases Monograph 20, Ed. 2, New York, Nervous and Mental Diseases Publishing Company.
3. Haas, S. V.: The Atropine Treatment of Pylorospasm and Pyloric Stenosis, Arch. Pediat. **36**: 816 (Oct.) 1919.
4. Ranschoff, J. L., and Wooley, P. G.: Operative Cure of Congenital Pyloric Stenosis; Thymic Death After Seven Months; Necropsy, J. A. M. A. **68**: 1543 (May 26) 1917.
5. Herczel: Experimentelle und histologische Untersuchungen über compensatorische Muskelhypertrophie bei Darmstenosen, Ztschr. f. klin. Med. **11**, 1886.
6. Patel: Lyon méd. **93**: 73.
7. Diseases of the Intestines and Peritoneum, in Nothnagel's Encyclopedia of Practical Medicine, American edition, 1904, p. 312.
8. Mosse: Centralbl. f. inn. Med., 1902, p. 281.
9. Pfaundler: Wien. klin. Wchnschr., 1898, No. 45.
10. Strauss, A. A.: Clinical Observations of Congenital Pyloric Stenosis, J. A. M. A. **71**: 810 (Sept. 7) 1918.

tumor. A closer investigation will, however, reveal many of the symptoms previously referred to: pallor, lividity, loss of turgor, circumoral cyanosis with cold, clammy, cyanotic hands and feet, subnormal temperature unless obscured by the starvation temperature; spasm not only of the pylorus but also of the larynx, pharynx, esophagus, cardia and various portions of the intestine, and hypertonicity and spasm of the skeletal musculature even to the degree of opisthotonos, often presenting the classical picture of infantile tetany. The general rigidity is often so great that the infants can be raised by head or heels while the opposite extremity rests on a table without the body being bent.

It is only necessary to recall a well known fact regarding the nervous system of the infant, to bring the entire picture into focus. This is that irritation of the infant nervous system produces an effect predominantly stimulating, the inhibiting effect being virtually absent.

TREATMENT

The treatment of this condition is the treatment of the individual infant. Atropin will overcome the underlying fault. But errors in diet and hygiene must also be corrected and all possible assistance rendered to the weakened organism. In every advanced case, saline solution should be used subcutaneously at frequent intervals until enough fluid can be taken by mouth to supply the body needs.

The atropin, to be effective, like digitalis, must be active. A fresh solution must be used. This means freshly prepared from the crystals, as deterioration in therapeutic efficiency is rapid when once in solution. Thus, in using a fresh preparation, 1 minim of a 1:1,000 solution has the effect not to be obtained by 5 minims of the same solution ten days later. In writing for a solution of 1:1,000, which is the strength recommended as lending itself best to easy manipulation, not more than 1 ounce should be ordered at a time, and the supply should be renewed, preferably at weekly intervals.

Fig. 3.—Four hours after the meal: no trace of the barium beyond the pylorus; complete obstruction of the pylorus.

The method of administration in the milder cases may be by mouth, the atropin to be put into the bottle, or, if the child is breast fed, in a teaspoonful of water before the feeding. In the more severe cases or after a barium meal given for roentgenologic examination, the hypodermic method is essential.

The dose, strangely enough, by the two routes is the same. The hypodermic administration need rarely be persisted in beyond the stage of the control of vomiting, after which the drug may be administered orally.

The dose to be used is variable and cannot be foretold. One one-thousandth grain with each feeding may suffice, or even one two-thousandth grain in rare instances, from this small dose to any maximum necessary to give relief or until the physiologic effect is obtained. The largest dose I have ever used was sixteen thousandths grain at each feeding (one-eighth grain [0.008 gm.] in twenty-four hours). Usually the result is obtained with half this dose or less.

Whenever a fresh supply of atropin is obtained, the first dose taken from the bottle should be a minimum one, regardless of what the previous supply of the drug had shown to be necessary to control the symptoms. When the strength has been tested, the previous dose is rapidly resumed. One drop of a 1:1,000 solution of atropin is given at the first feeding, increased by 1 drop in each succeeding or each alternate feeding as the exigencies of the case may demand until either the symptoms are relieved or flushing of the face occurs. On relief of symptoms the dose is maintained at this point, and rarely later requires to be increased unless the strength of the atropin solution is diminished.

The duration of treatment is also an individual matter. In some severe cases after two weeks it can be discontinued; in others it may be required for most of the first year. Usually, however, it is only a matter of a few months.

To know when it is no longer required it is only necessary gradually to reduce the dose or omit it from several feedings; if there is no recurrence of symptoms, the drug is no longer necessary. This should, however, not be tested until the infant has been doing well for some time.

Special points in the application of this treatment require mention. Occasionally, but exceedingly rarely, a child of this type is sensitive to atropin and requires at the beginning doses much smaller than $\frac{1}{1000}$ grain and much slower increase than previously advised. Among the hypertonic infants I have seen a few who were intolerant of the drug, and instead of obtaining a sedative effect, became excited by it, requiring its discontinuance. This I have never seen when pylorospasm existed, but possibly the number in which it has been used is too small to show it. I can offer no explanation for this, excepting perhaps that the disturbance lies on the sympathetic side of the autonomic system instead of the vagal.

Constipation, as previously mentioned, sometimes occurs as the result of a sigmoidorectal spasm. The omission of one, two or three doses of the drug usually results in an evacuation, when the atropin may be resumed as before, to be interrupted, perhaps, daily until the nervous system is in balance, which requires rarely more than a few days.

The type of child under discussion, although the physiologic effects as shown by the flushing, dryness, dilatation of pupils, rise of temperature, restlessness, and occasionally a mild delirium may occur, is practically immune to the harmful effects of atropin. I have now used this drug for more than six years in huge doses in many hundreds of cases, and know of several instances in which one teaspoonful of the 1:1,000 solution was used through ignorance, instead of 1 drop. I know of no case nor have I heard of one in which harm or death resulted. As a matter of fact, a few hours without the drug causes all toxic symptoms to disappear.

My experience with pylorospasm comprises more than forty cases, ranging from a mild spasm in which the projectile vomiting and failure to make progress

were the chief symptoms, to cases of complete stenosis, in which the condition was so bad that death seemed imminent. One of these patients died suddenly during the night, although the vomiting had already been controlled. Another in my absence from the city refused to continue treatment, and was operated on with success by Dr. Downes.

With these exceptions, all recovered completely under atropin treatment, although at least 20 per cent. had been advised that operation would be required.

In comparing medical and surgical treatment in these cases it must not be supposed that all surgical statistics are so brilliant as those of the Babies' Hospital.[11]

It requires the perfect team work of pediatric, surgical and nursing staffs as it is found only in such an institution to produce comparable results.

There are, of course, statistics far more favorable than these, such as Strauss of Chicago presents, with a mortality under 5 per cent.; but to any one familiar with these cases as they run, it seems hardly possible that he refers to the same group as reported from the Babies' Hospital. On the other hand, the less favorable statistics which have recently come from England reported by H. Tyrrell Gray,[12] who operated on thirty-eight patients by the Rammstedt method with a mortality of 55 per cent., and when the weight was under 6½ pounds (3 kg.), a mortality of 69 per cent., show that surgery alone is not a panacea, and that surgical treatment cannot yet be said to be so efficacious that medical treatment, especially by atropin, should not be given preference in every case until it has been shown to be wthout benefit.

Fig. 4.—After atropinization: findings, October 29, after ingestion of the barium meal: normal emptying time of the stomach, and patent pylorus.

REPORT OF CASE

I report one case, although others paralleling it could be offered. This is presented because it was treated under the eyes of many observers and carefully watched and followed.

Ruth D., a girl, aged 4 weeks, was admitted to Mount Sinai Hospital in the service of Dr. Henry Heiman, Oct. 20, 1921. The chief complaint was vomiting and constipation, which began about three weeks before. The patient was a first child; labor was normal; the birth weight was 5½ pounds (2.5 kg.); the infant had been breast fed exclusively up to the time of admission. The weight on admission was 4 pounds, 9 ounces (2 kg.). The patient was dehydrated. There was no cyanosis or dyspnea. In the abdomen no mass was felt; there was slight distention, and visible peristalsis in the epigastrium. The hands were hyperextended and cone shaped; there was no tremor or twitching. The skin was clear, with loss of elasticity, and dehydration. The provisional diagnosis was: pyloric stenosis; tetany.

The foregoing, from the notes of the house staff on the admission of the patient, illustrates better than all else the statement that pylorospasm is only one part of a general picture, in this instance giving as well the picture of tetany, although electrical reactions later were negative for this condition.

Until October 25, nothing in the way of treatment was carried out excepting feeding, saline solution subcutaneously and a rectal drip for twenty-four hours. Roentgen-ray examination revealed that nothing had left the stomach after four hours. October 26, atropin was begun by mouth at 9 a. m., 5 drops of a 1:1,000 solution, to be increased 1 drop at each two hour feeding until vomiting was controlled. Vomiting stopped at 2 p. m. after 7 drops had been given. There was occasional vomiting until October 29, when another roentgenogram disclosed that the meal passed the pylorus readily in normal time. The first stool occurred, October 28.

Through a misunderstanding, the infant was receiving only the routine ward treatment, plus atropin. November 5, although the baby was having stools, it was vomiting a great deal and was in such desperately bad shape that it was transferred to the surgeons. On hearing of this I requested a twenty-four hour delay until hypodermic medication and such other measures as recommended themselves might be carried out. This was granted with the consent of Dr. Richard Lewisohn, who was to have operated. These recommendations consisted of administering the atropin hypodermically instead of by mouth, increasing the number of breast feedings, and diminishing the number of bottle feedings, discontinuing weighing before and after each feeding, discontinuing bathing and unnecessary handling, and raising the temperature of the room in which the baby was kept. The accompanying chart will show the result. November 22, the weight was 5 pounds, 9 ounces (2.5 kg.), a gain of 14 ounces (0.4 kg.) in seventeen days. December 10, the weight was 6 pounds, 7 ounces (2.9 kg.), a gain of 28 ounces (0.8 kg.) in thirty-five days. From December 13 to December 17 it suffered an attack of bronchopneumonia, and was discharged cured on Dec. 20, 1921. The weight was 6 pounds, 8 ounces (3 kg.); vomiting had ceased; 1/200 grain of atropin was given twice daily. April 18, 1922, at the age of 7 months, the weight was 13 pounds, 2 ounces (6 kg.). There was no vomiting; the child was normal in every way. Atropin was discontinued when the child left the hospital.

SUMMARY

1. Uncertainty of etiology is the cause of differences in treatment.

2. Medical treatment was formerly practiced until the success of the Rammstedt operation caused surgery to be advocated exclusively.

3. To see and feel a pyloric tumor, with complete stenosis, and observe its histologic picture of hypertrophy of muscle fibers makes credence of any other view difficult.

4. The problem is nevertheless a medical one, and atropin is practically a specific.

5. Pyloric stenosis is only an advanced degree of pylorospasm.

6. It is only a single manifestation of a general hypertonic state whose etiologic factor is an overaction of the vagus portion of the autonomic nervous system. There is usually a hyperexcitability of all motor functions.

7. This condition has been variously described as the hypertonic infant, myotonia, myotonia spastica perstans, arthrogryposis, essential contractures, pseudotetanus, tetanoid conditions, infantile tetany, spasmophilia and vagotonia.

8. Experimental work supports this point of view.

9. Further support is found in reports of cure by other than surgical methods.

10. Differential diagnosis between pylorospasm and pyloric stenosis is practically impossible.

11. In 163 operative cases reported by Goldbloom and Spence (Am. J. Dis. Child. 19: 263 [April] 1920), the mortality was 19.63 per cent.
12. Gray, H. T.: Brit. M. J. 2: 891 (Nov. 26) 1921.

11. The symptoms of pyloric stenosis are projectile vomiting, visible peristalsis, constipation, starvation stools, rapid loss of weight and pyloric tumor.

12. Closer observation will reveal, as well, pallor; lividity; loss of turgor; circumoral cyanosis; cold, clammy, cyanotic hands and feet; subnormal temperature, unless obscured by starvation elevation, and spasm not only of the pylorus but often of the larynx, pharynx, esophagus, cardia, and various portions of the intestine. There is also hypertonicity of the skeletal musculature.

13. Irritation of the infant nervous system produces an effect predominantly stimulating. An inhibiting effect is virtually absent.

14. In the treatment, certain points should be observed:

(*a*) Errors in diet or hygiene must be corrected.

(*b*) In every advanced case, saline solution should be given subcutaneously at frequent intervals until enough fluid can be taken by mouth to supply body needs.

(*c*) Atropin, like digitalis, must be active, that is, it must be freshly prepared from the crystals. Once in solution, deterioration is rapid.

(*d*) In the milder cases, the drug may be given by mouth, in the bottle, or, if the patient is breast fed, in a teaspoonful of water before feeding.

(*e*) In the severe cases, the drug should be administered hypodermically until vomiting is controlled.

(*f*) The dose is variable, $\frac{1}{1000}$ grain (or even $\frac{1}{2000}$ grain, in rare instances) at each feeding to a maximum which either controls symptoms or produces the physiologic effect, i. e., flushing, etc. The largest dose used was $\frac{16}{1000}$ grain at each feeding, or $\frac{1}{8}$ grain in twenty-four hours. Beginning with $\frac{1}{1000}$ grain, one should increase the amount at each feeding until the result is obtained, when the dose becomes fixed.

(*g*) Treatment may need to be given only a few weeks, or may be required most of the first year.

(*h*) There are rare cases in which much smaller doses are required to begin with.

15. Occasionally, constipation with severe rectal tenesmus results. The omission of a few doses of atropin relieves this.

16. Infants of this type are practically immune to the harmful effects of atropin.

17. This paper is based on an experience of more than forty cases ranging from a mild spasm to complete stenosis. One of the patients died suddenly; another discontinued treatment and was successfully operated on. The others recovered under atropin treatment, although at least 20 per cent. had been advised that operation would be required.

18. In an illustrative case of so-called congenital pyloric stenosis with complete obstruction, the patient was cured by atropin.

19. Hypertrophic pyloric stenosis is a symptom of the hypertonic infant. It is only an advanced degree of pylorospasm. Most, if not all, cases can be cured by sufficient doses of atropin correctly administered.

666 West End Avenue.

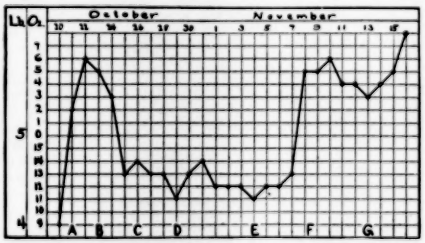


Fig. 5.—Weight curve: *A*, administration of saline solution subcutaneously; *B*, subcutaneous saline stopped; *C*, first three roentgenograms made, after which atropin was begun by mouth; *D*, roentgen ray; *E*, transferred for operation; atropin hypodermically; *F*, obstipation relieved by omission of atropin; *G*, loss due to vomiting when atropin was omitted.

SICKLE CELL ANEMIA

V. R. MASON, M.D.
LOS ANGELES

Recent medical literature contains the records of three patients, all negroes, or negroes with an admixture of Caucasian blood, in whom severe anemia, characterized by certain peculiar morphologic alterations of the red blood cells, was present. The first case was reported by Herrick.[1] Washburn [2] published the records of a patient whose blood showed similar changes, and Cook and Meyer [3] reported the third example of this rare type of anemia.

REPORT OF CASE

The following record is presented in some detail on account of the rarity of the disease:

History.—C. P., a negro, aged 21, was admitted to the Johns Hopkins Hospital, March 15, 1915, complaining of general weakness. The family history was fragmentary, and no evidence was adduced to indicate that any other member of the family had suffered from symptoms similar to his. The patient was born in Virginia and had never been farther than one of the contiguous states. He stated that, as far back as he could remember, he had been weak and sickly and unable to work or play as hard as other persons of his age. He had frequent attacks of tonsillitis during childhood, and gave a history of measles, pertussis, diphtheria and typhoid fever. He denied venereal infection. His present illness began about ten days before admission, with swelling of the ankles, increased thirst and frequent urination, and he stated that during this period he had lost about 40 pounds (18 kg.) in weight.

Physical Examination.—The patient was slender, and very black. There was no axillary hair, and the beard and pubic hair were scanty. There was marked pitting edema of both ankles. The epitrochlear glands were palpable, and there was slight general glandular enlargement. The tonsils and adenoids were moderately enlarged. The sclerae were pale and had a peculiar greenish hue. The mucous membranes were pale. The lingual papillae were not atrophic. There was slight dulness at the right pulmonary apex, but there were no râles. A roentgenogram revealed slight infiltration of the right upper pulmonary lobe. The cardiac impulse was forcible. Cardiac dulness extended 12 cm. to the left, and 4 cm. to the right, of the midsternal line. A loud systolic murmur was present at apex and base. The pulmonic second

1. Herrick, J. B.: Peculiar Elongated and Sickle-Shaped Red Blood Corpuscles in a Case of Severe Anemia, Arch. Int. Med. **6**: 517 (Nov.) 1910.

2. Washburn, R. E.: Peculiar Elongated and Sickle-Shaped Red Blood Corpuscles in a Case of Severe Anemia, Virginia M. Semi-Month. **15**: 490, 1911.

3. Cook, J. E., and Meyer, J.: Severe Anemia with Remarkable Elongated and Sickle-Shaped Red Blood Cells and Chronic Leg Ulcers, Arch. Int. Med. **16**: 644 (Oct.) 1915.

sound was accentuated. The radial arteries were easily palpable. The blood pressure was 105 systolic and 70 diastolic, according to the Tycos sphygmomanometer. The abdomen was

Fig. 1.—Unstained film of blood (high dry).

slightly distended. The liver edge was felt 9 cm. below the costal margin in the right mammillary line. It was smooth and slightly tender. The spleen was not felt, and splenic dulness was not increased. The genitalia were normal. The tendon reflexes were active.

Course Under Observation.—The patient was observed at intervals for nearly two years. The pallor, muscular weakness and edema of the ankles were present constantly. The urine was of low specific gravity, and contained a trace of albumin on each examination. On one occasion, the albumin amounted to 1 gm. per liter, measured by the Esbach albuminometer, and there were numerous hyaline casts. The phenolsulphonephthalein excretion, however, was 72 per cent. in two hours, and the blood urea nitrogen was 6 mg. per hundred cubic centimeters. In March, 1916, the patient was readmitted to the hospital complaining of headache, pain in the upper abdomen and jaundice. He stated that he had had several similar attacks during the last few years. There was marked rigidity and considerable tenderness of the right upper abdomen, and fever to 103 F. The sclerae were yellow, and the urine contained bile. These symptoms subsided in about a week, and the patient was discharged from the hospital. He returned for observation in July, 1916. He had developed deep, "punched out" leg ulcers on both ankles; otherwise his condition was unchanged.

Laboratory Examinations.—The Wassermann reaction was negative with serum on several occasions. Blood cultures taken during the febrile and the afebrile periods remained sterile.

The urinary findings of importance have been given. No parasites or ova were found in blood, urine or stools after repeated searching.

The blood was examined on many occasions, and the results have been summarized in Table 1. Fresh smears demonstrated a moderate leukocytosis without increase of the eosinophils. The blood platelets were not diminished in number.

The red blood cells were reduced in number, and there was marked anisocytosis and poikilocytosis. The characteristic alteration of the blood was marked secondary anemia with a large number of sickle-shaped and oat-shaped and elliptical erythrocytes (Figs. 1 and 2). Each red blood cell contained a normal amount of hemoglobin. By means of a specimen of blood stained by a Romanowsky dye, these changes of morphology were brought out more clearly. An occasional myelocyte and a few nucleated red blood cells were present. Erythrocytes showing diffuse or punctate basophilia were frequently encountered. A differential count of the red blood cells was made, and they were classified as accurately as possible according to shape and size (Table 2). About 25 per cent. of the erythrocytes showed a granuloreticulofilamentous structure when vitally stained with brilliant cresyl blue. The fragility of the unwashed red blood cells was determined by means of solutions of sodium chlorid, of various concentration. Hemolysis began at 0.3 per cent. and was complete at 0.18 per cent. sodium chlorid solution. Differential counts of the unhemolyzed red cells remaining in the tubes of this test demonstrated that the sickle-shaped and oat-shaped cells were more resistant than the more normal erythrocytes. The clotting time of the blood, according to Howell's method, was five minutes and twenty seconds. The blood belonged to Group II, by the Moss classification.

TABLE 2.—DIFFERENTIAL COUNT OF RED BLOOD CELLS IN CASE REPORTED

Cells	Per Cent.
Approximately normal	50.4
Sickle-shaped	3.4
Oat-shaped	14.0
Macrocytes, diameter greater than 10 microns	11.0
Microcytes, diameter less than 6 microns	6.8
Irregular and misshapen	14.4

TABLE 1.—RESULTS OF BLOOD EXAMINATIONS IN CASE REPORTED

Date	R. B. C., Million per Cubic Millimeter	W. B. C. per Cubic Millimeter	Hemoglobin, per Cent.	Color Index	Differential White Blood Count, per Cent.							Nucleated R. B. C. in Counting 250 W. B. C.	
					Polymorphonuclears			Small Mononuclears	Large Mononuclears	Transitionals	Myelocytes	Normoblasts	Megaloblasts
					Neutrophils	Eosinophils	Basophils						
5/ 3/15	2.46	20,700	39	0.8	77.2	0.4	0.8	15.6	4.4	0.8	0.0	8	0
5/17/15	1.95	19,000	40	1.0	50.3	1.0	0.3	23.3	6.7	2.0	7.4	0	0
5/30/16	2.12	14,300	48	1.1	50.0	0.0	2.0	31.2	5.6	3.6	4.8	72	0
4/ 4/16	2.32	12,400	50	1.1	57.5	0.0	0.0	25.0	7.5	1.5	6.0	0	0
4/28/16	2.75	12,600	58	1.0	58.6	1.0	2.0	27.6	4.3	2.0	4.3	3	0
5/15/16	1.96	20,400	48	1.2	41.2	2.0	0.3	52.6	2.0	0.3	1.3	305	4

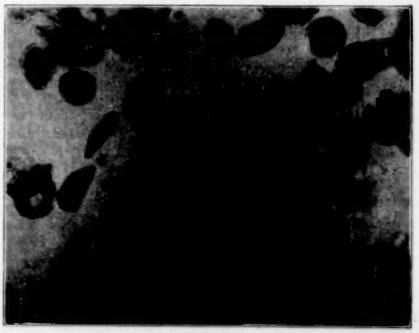


Fig. 2.—Stained film of blood (oil immersion).

COMMENT

The striking feature of the recorded cases is that all four patients were either negroes or mulattoes. Data concerning two are not definite, although they were described as negroes. Of the remaining patients, one was a mulatto and the other a negro without admixture of Caucasian blood. All were less than 30 years of age when the peculiar anemia was first discovered. They were equally divided as to sex. Two were born in Virginia and had never been farther than one of the contiguous states. One had recently come to the United States from the West Indies, and one had never left the immediate vicinity of St. Louis.

The cause of the peculiar type of anemia from which these patients suffered is not known, although a considerable amount of suggestive evidence has been obtained from clinical and experimental investigations. Studies of the blood have thus far failed to reveal the presence of any parasites, and the urine and feces of the patients have been free from metazoan parasites or their ova. Syphilis has also been excluded, as nearly as possible, as a causative factor, by means of the negative histories of the patients and the results of the Wassermann reactions with their serums. No patient in early life, by the occurrence of the disease only in negroes, and by the reports of Dresbach [5] and Bishop [6] of otherwise healthy, and presumably normal persons whose red blood cells were elliptical. Since two of those persons were brother and sister, it is reasonably certain that the anomaly was congenital.

The symptoms of the malady have been very similar in all the reported cases, and may be very briefly described. The patients all complained of weakness and poor health since early childhood. All had swelling of the ankles associated with leg ulcers probably dependent on the chronic anemia. Two patients had had repeated attacks of abdominal pain associated with fever and jaundice; these symptoms were relieved in one instance by the removal of a number of gallstones.

Physical examination revealed a few abnormalities of some interest. The sclerae were of a peculiar greenish color in three of the reported cases. Two patients had a slight general glandular enlargement with scanty pubic and axillary hair. The spleen was not recorded as palpable in any instance, a fact of considerable importance in differential diagnosis. Otherwise the physical signs were those usually encountered in patients with a severe, long-continued anemia.

TABLE 3.—RESULTS OF BLOOD EXAMINATIONS OF ALL OTHER CASES REPORTED

		Red Blood Count, Million per Cubic Millimeter	White Blood Cells per Cubic Millimeter	Hemoglob'n, per Cent.	Color Index	Differential Leukocyte Count, per Cent.						
						Polymorphonuclears			Small Mononuclears	Large Mononuclears	Transitionals	Nucleated R. B. C.
Reported by	Date					Neutrophils	Eosinophils	Basophils				
Herrick	1904	2.8	15,250	50	0.9	72	5	0	15	7	0	Present
	1906	2.7	30,500	55	1.0	58	7	0	22	12	0	
Washburn	April, 1909	2.0	11,000	50	1.2	63	4	6	25	2	0	
	Sept., 1909	2.4	8,140	51	1.0	64	4	0	27	3	2	Present
	Jan., 1911	2.5	12,400	48	0.9	63	3	2	24	5	1	Present
Cook and Meyer	Nov., 1914	2.0	10,500	45	1.0	58.4	12.6	0.6	17.8	10.6	0	32 while counting W. B. C.
	Nov., 1914	2.2	10,230	45	1.0	37.5	26	3	30.5	3	0	
	Jan., 1915	2.9	14,300	53	0.9	55	12	2	23	8	0	Present

gave a history of hemorrhages from any of the mucous surfaces, and no one dated his present symptoms from a previous illness. In each instance, however, the patient stated that he had been weak and unable to work hard as far back as he could remember.

Washburn's patient first developed leg ulcers at the age of five years, and it is probable, therefore, that she had anemia at that time. The family physician of the patient reported by Cook and Meyer stated that each of her brothers and sisters had died in early life of a disease associated with a grave anemia. Emmel [4] made careful studies of the blood of that patient and, in addition to the demonstration of evidences of phagocytosis of erythrocytes in the peripheral blood, he pointed out the interesting circumstance that many of the normal-shaped red blood cells became elliptical or elongated when allowed to remain in physiologic sodium chlorid solution at room temperature. Furthermore, he showed that the erythrocytes of the blood of the patient's father, although apparently normal in other respects, underwent similar changes when subjected to the same experimental conditions. These results have not been confirmed and, therefore, must be evaluated with caution. Nevertheless, they do point to an hereditary or congenital anomaly as the factor of importance in the development of the disease, and this assumption is supported by the history of disability

The abnormalities of the blood are of particular interest and of the greatest importance in the diagnosis of the disease (Tables 1 and 3). There was a marked anemia with a color index near unity. The red blood cells numbered from 2,000,000 to 3,000,000, and the leukocytes from 12,000 to 25,000, per cubic millimeter. The platelets were not thought to be diminished in number, although no counts were made. The blood of two patients showed a slight relative and a marked absolute eosinophilia. A small number of nucleated red cells and an occasional myelocyte were present in every film examined. A few red blood cells showed diffuse or punctate basophilia when the film was stained with a Romanowsky dye. A large number of erythrocytes could be vitally stained with brilliant cresyl blue. There was no increase or decrease of fragility of the red cells, and the clotting time of the blood was normal.

The clinical features and the morphologic alterations of the red blood cells are so characteristic that differential diagnosis was not difficult in the reported cases. The blood picture does not resemble that seen in any of the more common anemias, and it is possible that the disease represents a clinical entity. If that is true, it is of particular interest that up to the present the malady has been seen only in the negro, and, so far as could be ascertained, it is the only disease peculiar to that race.

919 Pacific Mutual Building.

4. Emmel, V. E.: A Study of the Erythrocytes in a Case of Severe Anemia with Elongated and Sickle-Shaped Red Blood Corpuscles, Arch. Int. Med. **20**: 586 (Oct.) 1917.

5. Dresbach, Melvin, quoted by Bishop, F. W.: Elliptical Human Erythrocytes, Arch. Int. Med. **14**: 388 (Sept.) 1914.

6. Bishop, F. W. (Footnote 5).

A SIMPLE NONOPERATIVE METHOD OF TREATING GASTRIC ULCER

PRELIMINARY REPORT

ALBERT A. EPSTEIN, M.D.
Associate Physician, Mount Sinai Hospital
NEW YORK

In discussing the treatment of gastric ulcer, Moynihan [1] says: "The present medical treatment is wofully inefficient. Medical treatment, if properly carried out for a prolonged period, should enable an ulcer to heal. The need for surgical procedure is a confession that such treatment is unattainable or has failed." This statement expresses the view generally held concerning the present treatment of gastric ulcer, and gains particular significance when we consider its source.

Fig. 1.—Tips of duodenal tubes: *a*, Lyons tip with side channel; *b*, Rehfuss tip.

The chief hindrances in the healing of a stomach ulcer are: (1) the direct irritation caused by the chemism of the gastric juice, as well as by the food which enters the stomach; and (2) the indirect irritation which manifests itself in increased peristalsis or hypermotility. It is reasonable to suppose that the ulcer would ultimately heal if these obstacles were overcome, i. e., if the gastric juice was not merely modified, but entirely removed, and food was prevented from entering the stomach for a sufficient period of time. The withholding of food is a relatively simple matter, and rectal alimentation is of great assistance in this respect. The rest is easily accomplished by the application of a simple nonoperative expedient, namely, continuous irrigation. This is the basis of the method to be described. Other details of technic and procedure have been added to make the method accurate, scientific and, at the same time, practical.

APPARATUS REQUIRED

The apparatus is the same in principle as that employed in the continuous irrigation of the chest after thoracotomy for empyema. The inflow and return circuit is maintained through two suitably adapted duodenal tubes. The apparatus consists of: a standard irrigating stand with four hooks, placed radially (preferably at right angles) and at different levels; two narrow-necked irrigating bottles, each of from ½ to 1 gallon capacity, fitted with a side spout, and rubber stoppers, each with a single perforation, provided for the neck and side spout; one double irrigating bottle holder, and two single irrigating bottle holders; one irrigating bottle (700 c.c. capacity) graduated with an outlet at the bottom (Carrel-Dakin type); one wide-necked bottle, of from 1 to 2 gallon capacity, fitted with a rubber stopper with three perforations; one glass or hard rubber T-tube (3/16 inch bore); one Y-shaped (glass or metal) two-way stopcock; [2] two spring pinchcocks; two L-shaped glass tubes (3/16 inch bore); two U-shaped glass tubes (3/16 inch bore); one straight glass tube about 4 inches long (3/16 inch bore); two glass connecting tubes (3/16 inch bore); one glass syringe (from 2 to 4 ounce capacity); one glass funnel (from 4 to 6 ounce capacity); rubber tubing (¼ inch bore), and two duodenal tubes.

The duodenal tubes in the present arrangement [3] constitute the intrastomachic irrigating system. One of the tubes is fitted with a Rehfuss tip, and the other is fitted with a modified Lyons tip. The modification consists in the removal of a lateral sector from the tip, so that it has a concave channel on one side. As is shown in the diagram (Fig. 1), the Rehfuss tip is placed from 2½ to 3 inches in advance of the other, which, by virtue of its side channel, is fitted snugly over the rubber tubing of the Rehfuss tube. The channeled tip is fastened firmly against the rubber tubing by means of threads of surgical silk. The rubber tubes connecting with the metal tips are placed parallel and are held together by loops of silk thread.

SOLUTIONS REQUIRED

The solutions required are: a saturated solution of Congo-red, a 0.25 per cent. solution of colloidal iron, [4] and distilled water.

ASSEMBLY OF APPARATUS

Figure 3 shows the apparatus as it appears when completely assembled at the bedside.

The double irrigating bottle holder (*H-1*) is suspended from the top hook of the stand. One end of the cross arm holds the large irrigating bottle *A*, and the other arm, the smaller irrigating flask *B*. Bottles *C* and *D* are suspended from the second and third hooks, respectively, by means of metal holders. Rubber stoppers, each with one perforation, are fitted into the neck and side spout of bottles *A* and *C*; bottle *D* is corked with a rubber stopper having three perforations, in two of which straight glass tubes are placed, and the stem of a T-shaped tube passes through the third perforation.

One arm of an inverted U-tube is placed in the stopper of bottle *A*; rubber tubing (*K-1*), provided with a pinchcock (*PC-1*), connects the other arm of the U-tube with one of the straight glass tubes projecting from the stopper of bottle *D*. The side spout of bottle *A* is fitted with a perforated stopper through which passes one arm of an L-tube (*L-1*). A piece of tubing 6 inches long is attached at one end to flask *B* (*K-2*), and at the other, to one arm of a Y-shaped two-way stopcock (*2-WSC*). A short piece of tubing also connects the other arm of the stopcock with the side spout of *A*. Thus the two arms of the Y-shaped stopcock join bottles *A* and *B*. A long piece of tubing (*K-3*) is fastened to the stem of the two-way stopcock. It ultimately connects with one of the duodenal tubes, forming the inflow channel of the irrigating system.

Fig. 2.—Cross-section of rubber tube and channeled tip, showing their close position.

One arm of an inverted U-tube (*U-2*) is fitted into the stopper in the neck of bottle *C*. Rubber tubing (*K-4*) connects the other arm of this U-tube with the second straight glass tube in bottle *D*. The side spout of bottle *C* is fitted with a rubber stopper carrying one arm of an L-tube (*L-2*); to the other arm, a long piece of tubing is attached (*K-5*), the free end of which reaches well into a bucket resting on the floor. This tube is provided with a metal or hard

1. Moynihan, B.: Treatment of Gastric Ulcer, Lancet **1**:267-271 (Feb. 11) 1922.

2. In place of the two-way stopcock, a Y-shaped tube (glass or hard rubber) with two extra screw pinchcocks may be used.

3. Modifications are being made in order to produce a more finished instrument.

4. The colloidal iron employed is a solution of dialyzed basic ferric oxychlorid. It appears on the market as a 5 per cent. solution. The preparation used is that of Pfanstiehl, obtained from the Special Chemicals Company, Highland Park, Ill.

rubber pinchcock (*P C-2*) and serves to convey the water from the exhaust bottle *C*. The stem of the T-tube in bottle *D* passes through the rubber stopper, and attached to one of its arms, which is provided with a metal pinchcock (*P C-3*), is a short piece of rubber tubing (*K-6*). To the other arm, a long piece of rubber tubing (*K-7*) is attached. The latter tube connects ultimately with the second duodenal tube and constitutes the drain or return-flow channel of the irrigating system.

METHOD OF TREATMENT

The patient is put to bed with his head and shoulders resting on two pillows. The joined duodenal tubes, which have been previously chilled, are then swallowed and left in place for a period of about ten to fifteen minutes. The depth to which the tube is permitted to enter is dependent on the information derived from a previous fluoroscopic examination. Never should the distal portion of the tube be nearer than from 1 to 1½ inches to the pyloric ring.

The distilled water is first warmed to body temperature or even a little higher, then colored with the saturated solution of Congo-red (1 c.c. to the gallon), and poured into bottle *A*. This constitutes the irrigating fluid. Distilled water is used to reduce the stimulating effect of the fluid on the gastric mucosa to a minimum. The Congo-red added to it serves as an indicator of the presence of hydrochloric acid in the stomach, which manifests itself by the blue coloration of the return fluid. Flask *B* is filled up to the zero mark with a 0.25 per cent. colloidal iron solution. The method of its use will be indicated later. It serves the purpose of a styptic and mild astringent; moreover, by its precipitating action, it removes all the mucus which adheres to the gastric mucosa, as well as the peptic ferments. Bottle *C* (exhaust bottle) is filled to the neck with tap water.

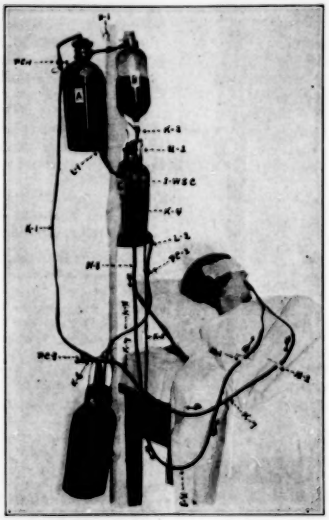


Fig. 3.—Apparatus assembled at bedside.

The various stoppers are then fitted into their proper places. The ends of the rubber tubes *K-3* and *K-7*, inflow and outflow, are joined to the loose ends of the two duodenal catheters by means of glass connecting tubes. These two connecting tubes are fastened with safety pins (*M-1* and *M-2*) to the sheet or coverlet alongside the patient, so that they may be plainly in view. Through these glass tubes, the color as well as the course of the inflow and outflow of the irrigating fluid can be observed.

To start the irrigation, the two-way stopcock (*2-W S C*) is turned so as to permit the flow from bottle *A*. By opening the pinchcock (*P C-3*) at the loose end of the T-tube in bottle *D*, the flow into the stomach is facilitated, and any gas or air present is permitted to escape. After from 500 to 600 c.c. of the colored distilled water has entered the stomach, the pinchcock (*P C-3*), just referred to, is closed. The stopcock (*P C-2*) is now opened to permit the water to flow from bottle *C*. This creates a partial vacuum in *D* (vacuum drain), which in turn causes suction in the return duodenal tube, bringing about a flow from the stomach. Bottle *D* serves as a receptacle for the return fluid.[5]

As long as hydrochloric acid is present in the stomach, the return flow will remain colored blue. The irrigation should be continued until the return fluid is of the same color as the irrigating fluid. If solid particles are seen to be present in the return fluid after all the acid has been removed, the irrigation should be continued until they are no longer present.[6] The inflow is then stopped; but the suction is continued until all the irrigating fluid has been removed from the stomach. Fifty cubic centimeters of the colloidal iron solution is then allowed to flow into the stomach, and permitted to remain there. The duodenal tubes are then withdrawn and the treatment is complete. The patient is permitted to rest for two hours. The colloidal iron is given for the first three days only, or longer in cases in which no food is given by mouth. In the two hour interval between treatments, a 5 per cent. glucose solution is administered by the rectal drip method.

Each period of irrigation, followed by the instillation of colloidal iron, constitutes a treatment. The number of treatments which it is possible to carry out in the course of a day is somewhat variable, and depends on a number of circumstances: (1) the expertness of the attendant in the necessary technic; (2) the ease with which the patient takes the tubes and retains them in situ; (3) the quantity of mucus and débris to be removed from the stomach, including bile regurgitated into the stomach; (4) the rate and quantity of gastric secretion, and (5) the comfort and physical endurance of the patient. From the experience thus far gained, the number of treatments need not exceed four, but, for proper efficacy, no less than two should be given daily. That total duration of the treatment is from two to three weeks. In the first week, the maximum number of irrigations are given. Subsequently, the number is gradually reduced, and so timed as to fit in with the feeding of the patient.

FEEDING OF THE PATIENT

No food is given by mouth for the first three days. On the fourth and fifth days, one ounce of equal parts of milk and cream, warmed to body temperature or

5. Occasionally shreds of mucus or food débris will obstruct the fenestrae in the metal tips of the return tube, and thus interfere with the return flow. The tube should then be disconnected at *M-2* and the glass hand syringe should be employed to clear the channel. The obstruction is usually removed by alternately forcing some fluid through the tube and withdrawing it.

6. In cases of gastric ulcer associated with anacidity, the Congo-red is of no special advantage and the irrigation should be continued as long as mucus and débris are present in the return fluid.

slightly above, is given one hour after each stomach irrigation. On the sixth day, 2 ounces of the milk and cream mixture is given. As soon as the irrigations are reduced in number, the number of feedings is increased. Farina and strained oatmeal gruel are added; on the seventh day one egg, boiled for one minute, is added. On the eighth day, a second egg is added, and the quantity of gruel is increased from 1 to 4 ounces. On the ninth day, a third egg is added. On the tenth day, 50 gm. of scraped beef and three well buttered pieces of zwieback, divided into three portions, are added. The allowance of milk and cream is doubled. On the eleventh day, 75 gm. of chicken is substituted for the beef. The gruel is increased to 3 ounces. Subsequent feeding depends on indications. Rectal instillations are continued throughout, the quantity being reduced as feeding by mouth is increased.

It may be necessary, in certain cases, to withhold food from the stomach longer than indicated above. In such cases, duodenal feeding may be resorted to. This is readily accomplished by permitting the forward irrigating tube to pass down to the duodenum, after first removing all the fluid from the stomach.

Thus far, the plan of treatment outlined above has been followed by the late Dr. E. A. Aronson and myself in seven cases selected from his private practice. Among these were four cases of gastric ulcer, one case of pyloric ulcer with pylorospasm and marked food retention, one case of duodenal ulcer, and one case of gastrojejunal ulcer. A detailed analysis of these cases will appear in a future report. For the present, it may be stated that the relief which the patients have obtained by this method of treatment has been very striking. Whether the results thus obtained will prove to be permanent requires further observation; but they have been sufficiently promising to warrant this preliminary communication.

70 East Eighty-Third Street.

CLASSIFICATION OF CONGENITAL CLEFTS OF THE LIP AND PALATE

WITH A SUGGESTION FOR RECORDING THESE CASES*

JOHN STAIGE DAVIS, M.D.
BALTIMORE
AND
HARRY P. RITCHIE, M.D.
ST. PAUL

The group plan for the description, discussion and recording of cases of congenital cleft of the lip and palate has recently received considerable attention from those especially interested in the subject; but we believe that it is of so much importance that it should be advocated more strongly if its general adoption is anticipated. The growth of the plan has been gradual, suggestions being received here and there from our associates, and particularly from the late Dr. H. M. Sherman of San Francisco, whose definitions of the groups are so exact in wording and direct in form that we believe they will, with slight simplification, become the most important feature of the scheme.

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

It is now generally accepted, by those who have given thought to the matter, that the term "harelip" should be discarded, and that the deformity thus named should be called "congenital cleft of the lip." Analysis of the word "harelip" reveals that its use has no foundation except as a simile. Embryologically considered, all congenital clefts of the lip and palate are the result of failure in the same process of union and, therefore, should be considered under this heading. When this point of view is taken, it becomes possible to classify the clefts on a surgical basis, according to the general procedure required for the repair of a given case.

The entire medical profession is interested in these clefts, because, sooner or later, patients with this deformity will come under the observation of nearly every one.

So far, there have been no generally accepted standard terms for describing congenital clefts of the lip and palate, and, in consequence, it is often difficult to understand the descriptions in some of the numerous articles written on the subject. One author may use a set of terms to describe certain of these conditions, while another may use the same terms to describe those conditions which are surgically different. Then again an author may have a set of terms which, it appears on investigation, he alone uses, and the reader may have to depend on the illustrations to find what is really meant by the text. In fact, the terminology is considerably confused; and, in a review of a number of classifications, we have not found one which we consider so rational as that which we shall present.

CLASSIFICATION

The object of this communication is to propose a simple classification for congenital clefts of the lip and palate, which is based upon the proposition agreed to by us, namely, that *the alveolar process forms the foundation for a surgical grouping.*

Accepting this as a logical basis, Dr. Sherman suggested the following terms for grouping these clefts: Group I, prealveolar cleft; Group II, postalveolar cleft; Group III, unilateral alveolar cleft, and Group IV, bilateral alveolar cleft.

In reviewing these terms we have agreed that there are two objections to them: First, the terms as they stand are incomplete; therefore, the word "process" should be included to make them exact. Second, the terms "unilateral" and "bilateral" may well be applied to Group I, and, therefore, cannot be used primarily in one instance and not in another. In meeting these objections we have revised and combined the terms into three groups: Group I, prealveolar (process) cleft; Group II, postalveolar (process) cleft, and, Group III, alveolar (process) cleft.

Furthermore, the group terms, while self-explanatory as they stand, do not give sufficient detail to be practicable in describing these cases, since, while each group usually occurs alone, it may be present in combination with other groups. It must also be borne in mind that the clefts of lip, palate and alveolar process may vary in extent, and, therefore, a number of anatomic varieties may be found which require description.

We present the following classification which is based on a proper conception of congenital cleft of the lip and palate, and we believe that it will fulfil the requirements.

Group I. Prealveolar (process) cleft. (Lip cleft; alveolar process normal.)

1. Unilateral. Right. Left. Complete. Incomplete.
2. Bilateral. Right: Complete; incomplete. Left: Complete; incomplete.
3. Median (rare). Complete. Incomplete.

Cleft of the palate may be associated with this group.

Fig. 1.—A typical case of prealveolar (process) cleft (Group I). It would be advantageous for the reader to visualize the various anatomic varieties in this and other groups when reading the classification.

Group II. Postalveolar (process) cleft. (Palate cleft; alveolar process normal.)

1. Soft palate. (The uvula only, or the entire soft palate, may be cleft.)
2. Hard palate. (May be notch only, or cleft may extend to the anterior palatine foramen, in addition to the soft palate.)

Cleft of the lip may be associated with this group.

Fig. 2.—Reproduction of a drawing of a pig's palate illustrating a postalveolar (process) cleft (Group II).

Group III. Alveolar (process) cleft. (Cleft follows incisor sutures.)

1. Unilateral. Right: Complete; incomplete. Left: Complete; incomplete.
2. Bilateral. Right: Complete; incomplete. Left: Complete; incomplete.
3. Median (rare). Complete. Incomplete.

Clefts of the lip and palate are usually associated in this group.

In approximately 4 per cent. of our cases, Group I (prealveolar cleft) and Group II (postalveolar cleft) occur in the same case. While this is an associated lip and palate defect, the surgical problem is in nowise the same as in Group III, so each defect should be described under its proper surgical heading.

In the third group there is usually an associated cleft of the process, lip and palate of many degrees anatomically; but there must be included here that case, of variable frequency, in which a cleft lip and cleft process are present with a normal palate, or, if such cases occur, of a cleft palate and cleft process with a normal lip. The proper classification of these cases is a subject for debate, for many times the surgical problem is limited to the lip or palate only, and, therefore, Group I or Group II is suggested. It will be more practicable to record them in the third group as there the opportunity is given for the direct description of the three structures.

Any case in which the alveolar process is normal is recorded in Group I or Group II, or both. Any case in which the alveolar process is cleft is recorded in Group III.

The classification is an effort to develop specific surgical terms for the case, based on the alveolar

Fig. 3.—Alveolar (process) cleft, unilateral (Group III).

process, thereby placing all anatomic descriptions subsidiary to these terms and giving the opportunity of recording separately the alveolar process, lip and palate.

We have found that the plan encourages statistical study and permits of analysis of palate and lip in their relation to each other; likewise, the operation whether primary, secondary, or tertiary, or, as occurs occasionally, even later procedures, and yet keep the original picture by first recording the group.

In teaching, it is of the greatest advantage to be able to locate directly the debatable problems of treatment in their relation to the whole subject with its multiplicity of anatomic states.

This grouping correlates all cases to the subject of congenital clefts; it separates the cases according to their special surgical requirements, and it indicates in every case, directly instead of by implication, the most important condition—that of the alveolar process.

A SUGGESTION FOR RECORDING CONGENITAL CLEFTS OF THE LIP AND PALATE

At one time or another, we have found it necessary to look over the records of congenital clefts of the lip and palate in certain hospitals, and we have been astonished by the utter lack of value of the majority of these

records. As far as we can ascertain, the histories of these cases taken in the hospitals of other cities are little, if any, better. The hospital histories for the most part have been taken by fourth year students or house officers and, as these cases are comparatively rare, in many instances the one who takes the history had evidently never seen a congenital cleft before, so he could not be expected to know (and evidently did not know) the important points to be noted, or how to use the correct descriptive terminology. It might also be said that records of these cases taken by men of longer experience are frequently incomplete. It occurred to us that the matter might be simplified and the records made more useful and comprehensive if a standard printed history sheet, with headings and simple diagrams, could be devised which would contain all the necessary and important data to be noted.

Long charts are not to be recommended; but if we are to get definite information concerning these clefts, on many points not yet clearly understood, we must assist the one who takes the history by giving him a

Fig. 4.—Alveolar (process) cleft, bilateral (Group III).

printed chart to fill out so that none of the essential items will be omitted.

Many men have reduced the histories of these cases to what they call "essential information only." This may be all that they require for their records and operative work; but when they come to look up special points, such, for instance, as those which might give information as to the etiology, their records are valueless.

Dr. Vilray Blair of St. Louis has a most excellent working chart; but it is not based on any particular classification. Without doubt, there are other charts in use.

We suggest the use of the history sheet reproduced herewith, which is based on the group plan as presented in the first part of this communication. The items may be rearranged in any way that is convenient to individual or hospital needs. Additions may also be made if any data worth recording are found for which there is no heading.[1]

Should the group plan with its classification be accepted by teachers in the medical schools, and the history sheet be adopted in the hospitals and in the private work of surgeons interested in congenital clefts of the lip and palate, the medical profession, when dealing with these cases, would soon become familiar with and use this rational and understandable nomenclature, which is based on logical terms.

Fig. 5.—A case of prealveolar cleft and postalveolar cleft, each defect to be recorded in its proper surgical group.

ABSTRACT OF DISCUSSION

DR. JAMES E. THOMPSON, Galveston, Texas: If a classification is to be accepted, it must not alone have an anatomic and embryologic foundation, but it must be of practical surgical value. Otherwise we shall gain nothing. It seems to me that in the classification of congenital fissures of the lip and palate we have contented ourselves with an indiscriminate list of certain embryologic faults without any reference whatsoever to their surgical bearing. Consequently, it has always been a difficult matter for a surgeon in writing on this subject to explain himself intelligibly. I gather from Dr. Ritchie's paper that he makes the statement that the

Fig. 6.—A case presenting cleft lip, cleft process and normal palate, to be recorded as Group III, unilateral or bilateral, as this affords the only opportunity to record these conditions. In the chart, the lip and process are noted and the palate is erased.

alveolar border is the basis for all surgical groupings. If he can prove this point, we shall be forced to accept his classification. I believe that most surgeons are willing to accept it without contention. In 1921, I tried to standardize operations in cases of cleft palate. I found serious difficulty in classification and was compelled to make a grouping of

1. Descriptions of operations, postoperative notes, temperature charts, etc., have been purposely omitted from this sheet.

my own, without previous knowledge of either Dr. Sherman's or Dr. Ritchie's work. The result was that I divided cleft palate into three main types: (1) a complete unilateral cleft of the alveolar border and palate; (2) a complete bilateral cleft of the alveolar border and palate, and (3) a cleft of the palate with alveolar border intact. In other words, I found that the condition of the alveolar border was the

CONGENITAL CLEFT LIP AND PALATE

HISTORY

Fig. 7.—Obverse side of chart for recording congenital cleft lip and palate defects.

natural basis of an intelligent classification. I believe that the condition of the alveolar border predetermines absolutely the kind of operation suitable to the particular case, and that afterward the sequence of operation follows logically. I have drawn up a table of operative sequences and alternatives which shows in a graphic manner the choice of procedures and the sequence in which the various parts of the defect are repaired. It is founded on the belief that the alveolar border is the key to every case and that repair of these processes must take precedence. It is my custom to mold the maxilla first in all cases. Whether one should be content with molding or should follow it up with suture is a matter of choice. There are grave objections to penetrating the jaws during the passage of sutures, the chief of which is the disrupting of tooth elements. If one could hold the molded jaws in contact without hurting the bone, the procedure would be ideal. I agree with Dr. Ritchie that there is great need of improvement in classification and nomenclature and that the scheme he has presented is a step in advance, because it attempts to give us a classification that is based on correct anatomic and surgical conceptions. The difficulties of grouping the cases under the various headings are mere matters of detail.

Dr. Vilray P. Blair, St. Louis: I am thoroughly in sympathy with and heartily approve of the whole idea, but we are attempting to project something for universal adaptation. If it is not universally adopted, it is not worth while; and, to assure its adoption, it must be the best plan. If it is not, some one will present something a little better, upset the one we have adopted and go on. That is my excuse for any adverse criticism I may make. Dr. Ritchie puts forth the idea that the most important part of the cleft palate operation is the alveolar process, and that it must be dealt with primarily. He also puts forth the idea that the classification shall be along surgical lines, abandoning the anatomic lines. Granting that, as Dr. Thompson says, the surgical classification has the broader appeal, the anatomic basis is more fixed. To my mind, it is possible that in the future development of this work, the alveolar cleft may be disregarded, and then you would have a classification based on a surgical conception that had not stood the test of time. Dr. Ritchie makes no place for the prealveolar cleft combined with the alveolar cleft, because the alveolar cleft needs no surgical attention. The surgery is shifting and the anatomy is fixed. I am not sure we are sufficiently advanced to make a permanent, logical classification on a surgical basis. That is all right if you do not operate on it. About his diagram: I have found it easier to get the intern to give a description by having a picture of the different types around which he can draw a circle. I am perfectly willing to adopt this classification, but before we adopt it we must agree which is the best.

Dr. Truman W. Brophy, Chicago: Finding that there was no classification by which writers could describe the many forms of harelip and cleft palate, I prepared one which includes all of the forms of cleft palate, anatomically considered. Every muscle and bone involved in this deformity is considered. The lip is not included, though it should have been. The forms are: 1. A very simple form of cleft palate, just a partial cleft of the uvula. 2. A cleft extending forward into the fibers of the levator palati and the reflected portions of the tensor palati muscles; which gives the absolute anatomic form. 3. A cleft extending through the uvula and forward to the posterior border of the horizontal plates of the palate bones. 4. A cleft extending through the entire

SPECIAL EXAMINATION

Fig. 8.—Reverse side of chart for recording congenital lip and palate defects.

soft palate, including partial or complete cleft of the horizontal plates of the palate bones. 5. A cleft of the entire soft palate, through the horizontal plates of the palate bones and into the palatal processes of the maxillae. 6. A cleft of soft and hard palate nearly as far forward as the line of union between the maxillae and the premaxillae. 7. A complete single cleft of the entire soft and hard palate, including

the alveolar process (the maxilla is separated from the premaxilla, usually on the left side, and accompanied by single harelip). 8. A tripartite cleft, extending through soft and hard palate, separating the premaxillae from the maxillae; nearly always complicated with double harelip. 9. A cleft of the entire soft palate, extending through the horizontal plates of the palate bones and into, although not through,

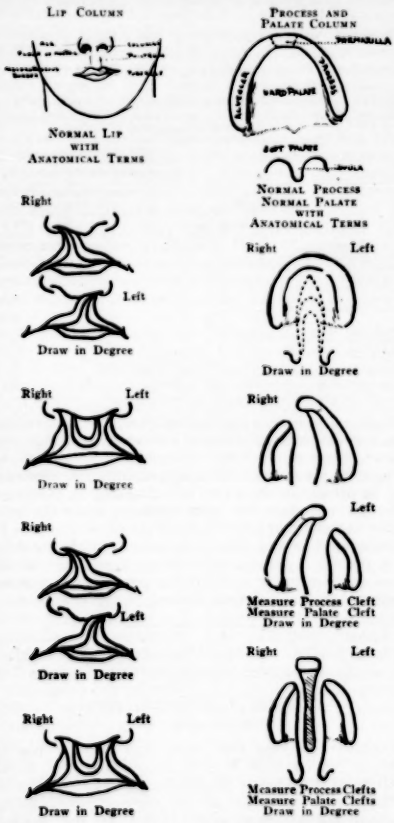


Fig. 9.—Reproduction, exact size, of marginal illustrations appearing on the chart.

the palatal plates of the maxillae. (The premaxillae are separated from the maxillae, between which and the anterior part of the cleft, the hard palate is normal. It is usually complicated with double harelip.) 10. A cleft only between the maxilla and premaxilla, usually on the left side and accompanied by single harelip. 11. A cleft completely separating the premaxillae from the maxillae, with the palate otherwise normal. 12. A cleft only of the anterior one half or one third of the hard palate, with protruding premaxillae which are entirely separated from the maxillae. 13. A cleft of the entire soft and hard palate, extending through the alveolar ridge on one side, with premaxillae separated completely on one side and partially on the other. 14. A cleft of the soft palate, partial or complete, normal hard palate with cleft in the alveolar border. 15. A cleft only of the alveolar process anterior to the maxillae, due to the non-development or absence of the premaxillae, usually accompanied by harelip in the median line. 16. An exceedingly rare form, a cleft completely separating in the median line the entire palate and lip. If we can make a classification that will cover all these conditions anatomically, it will be well. We should have a complete classification.

DR. HARRY P. RITCHIE, St. Paul: Dr. Thompson has picked out the point that is most important for you to accept or discard. If you do not agree to the proposition that the condition of the alveolar process is the most important anatomic condition affecting selection of surgical procedures, then the scheme fails. But Dr. Davis and I have agreed that it is, and have made the alveolar process a foundation for a surgical grouping. It is not the time to repeat the arguments, but you may be sure that this proposal has received our earnest attention. What we are trying to do is to suggest a classification for the case, some descriptive term to include all forms and degrees of both palate and lip. We are making the effort to argue out and select agreeable and uniform terms for our descriptions and discussions. In a review of the literature, there is very often agreement on the various methods of treatment, but this fact is not admitted, owing, in many instances, to the very evident looseness of our terminology; and I do not see why we cannot develop a common and understandable language for these defects. I recognize the difficulty in advocating the disuse of a term so fixed in the literature as "harelip." I can find many arguments against its use but none for it, except custom. The condition is a cleft lip and all we are asking is to say so. Following the efforts to develop uniform terms, the divorcement of the alveolar process cleft from the palate cleft is equally important. In the surgery of this feature, I feel sure that operations to close the process have been interpreted as operations on the palate. We believe that the condition of the process is very important, and are simply asking you to say alveolar cleft instead of indicating it as a complete palate. I feel sure that the process and palate can be separately described from a surgical standpoint and that we may obtain embryologic evidence to support us. The plan involves the employment of terms of classification for the case, including both lip and palate, whether associated with cleft process or dissociated with normal process. Under the general terms for the case come the form divisions of unilateral and bilateral and median; then last, terms of degree, such as complete and incomplete; and then we have an orderly plan of record. Dr. Blair is right in saying this plan should be considered thoroughly before acceptance. If this is a new point of view, it should not be accepted until all defects are corrected. Our attitude is one of invitation of criticism. Dr. Brophy's palate classification is acceptable and understandable but our effort is to include the lip, and Dr. Brophy's forms fit readily into our grouping. Dr. Davis and I are interested to know whether this scheme will only add confusion to an already complicated subject or whether it will be considered as an earnest constructive effort.

Child Welfare in an Anthracite Coal-Mining District.—In a bulletin recently issued by the Children's Bureau of the U. S. Department of Labor, on excessive child labor in a Pennsylvania coal mining district, a direct relation between child labor and low earnings of the fathers is reported. The bulletin deals with children from 13 to 16 years of age in a district of the central field in Schuylkill County, Pennsylvania. In this area of little more than half a square mile, 24,726 were found living. A total of 519 boys had been employed, contrary to law, before reaching the age of 14 years, and 137 boys, not yet 16, had been employed underground. Of the 978 boys from 13 to 16 years of age who had been employed in or about the mines, 178 had suffered accidents. In ninety families studied, fatal accidents to the father had occurred, and in 235 families the chief wage earner had been disabled either totally or partially.

SPECIFIC PRECIPITIN REACTION OF LEUKOCYTES *

LUDVIG HEKTOEN, M.D.
AND
F. R. MENNE, M.D.
CHICAGO

We wish to report briefly the results of some experiments on the specific precipitinogenic action of leukocytes. The first experiments were made with extracts of dog and guinea-pig leukocytes obtained from the injection of suspension of wheat gluten in the pleural or peritoneal cavity. The leukocytes were washed many times in salt solution, and definite quantities by weight suspended in water and shaken thoroughly; an equal amount of physiologic sodium chlorid solution of double strength was then added, and the strength of the extract designated by the relation of the weight of the leukocytes extracted to the total quantity of the fluid used, this being usually 1:10 or 20 or 100. Rabbits were injected intravenously at three-day intervals with increasing quantities of such extracts, say 2, 3, 4, 5 and 6 c.c. of a 1:20 extract, and the serum was tested about the fifth day after the last injection. The results with extracts of dog and guinea-pig leukocytes are illustrated in Table 1. As shown in the table, the precipitin for dog serum in the antiserum for dog leukocytes may be removed by means of specific absorption. Extracts of dog leukocytes obtained by fractional centrifugation of citrated dog blood gave similar results as extracts of the leukocytes in exudate.

We now turned our attention to human leukocytes, and made experiments of the same general nature as those just outlined with extracts of the leukocytes in human blood and in the exudates of pleural empyema

TABLE 1.—SPECIFIC PRECIPITINS FOR EXTRACTS OF DOG AND GUINEA-PIG LEUKOCYTES *

	Antiserums Produced by Injections of				
	Extract of Dog Leukocytes		Extract of Guinea-Pig Leukocytes		
Antigens	Original Antiserum	After Treatment With an Equal Amount of Dog Serum 1:200, Antiserum Now Diluted One-Half	Original Antiserum	After Treatment With an Equal Amount of Guinea-Pig Serum 1:200, Antiserum Now Diluted One-Half	Normal Rabbit Serum
Extract of dog leukocytes	4,800	2,400	0	0	0
Dog serum	500	0	0	0	0
Extract of dog erythrocytes	0	0	0	0	0
Ext. of guinea-pig leukocytes	0	0	1,250	640	0
Guinea-pig serum	0	0	80	40	0
Ext. of guinea-pig erythrocytes	0	0	0	0	0

* The figures give the highest dilutions in which the leukocytic extracts and serums gave precipitates by the contact method after one hour at room temperature.

and gonococcal arthritis, as illustrated in Table 2, which also gives certain results obtained with antiserums produced by injecting rabbits with a 5 per cent. suspension of whole human leukocytes—1, 2, 3, 4 and 5 c.c. at three-day intervals—and with the filtered serum of the exudate of pleural empyema, 1, 2, 4 and 6 c.c., also at three-day intervals. Here again the precipitins for homologous serum may be removed from the antiserum by mixing it with diluted human serum without any apparent reduction in the precipitin for leukocytic extract. In connection with this matter it

* From the John McCormick Institute for Infectious Diseases.

is of interest to note that the antiserum of rabbits injected with human leukocytic extract did not contain any precipitin for the proteins in human serum.

The erythrocytic [1] and other extracts used in the work with antileukocytic serums were prepared in the same way as the leukocytic extracts, and were shown by appropriate tests in each case to contain peculiar elements that evidently differ from derivatives of the leukocytes.

Extracts of dog, guinea-pig and human leukocytes contain specific precipitinogenic substances. Whole human leukocytes and the serum of pleural exudate in

TABLE 2.—PRECIPITINS FOR EXTRACTS OF LEUKOCYTES

	Antiserums Produced by Injections of				
			Serum of Empyema Exudate After Passage Through Berkefeld Filter		
Antigens	Extract of Human Leukocytes	Whole Human Leukocytes	Original Antiserum	After Treatment with Equal Amount of Human Serum 1:200, Antiserum Now Diluted One-Half	Normal Rabbit Serum
Extract of human leukocytes	160	320	320	160	0
Human serum	0	10	2,500	80	0
Extract of human erythrocytes	0	0	0	0	0
Extract of human platelets	0	0	0	0	0
Extract of stroma of human erythrocytes	0	0	0	0	0
Serum of empyema exudate	160	500	5,000	80	0
Serum of exudate in gonococcal arthritis	32	320	5,000	160	0

empyema also induce the formation of specific precipitins for extracts of human leukocytes. Leukocytes appear to contain specific elements not found in red corpuscles, platelets or blood serum, and these elements may be present in the serum of inflammatory exudates.

So far no effort has been made to study the precipitin reactions of any special kind of leukocyte. If the mononuclear and other leukocytes could be obtained pure, possibly by means of cultures, it no doubt would be of much interest to study the precipitin and other reactions of the different forms.

1. Hektoen, Ludvig, and Schulhof, Kamil: On Specific Erythroprecipitins (Hemeglobin Precipitins?), J. Infect. Dis. 31:32 (July) 1922.

PROSTATIC MASSAGE: A PRACTICAL AND THEORETICAL DISCUSSION *

GEORGE F. FARMAN, M.D.
SANTA BARBARA, CALIF.

Prostatic massage first came into popular use in 1894, at which time it was adopted by the Royal Institute of Massage at Stockholm. Posner [1] of Berlin, in 1893, mentioned the cure of chronic prostatitis by repeated digital expression. Prior to the general acceptance of this therapeutic procedure, diseases of the prostate were treated by applications to the perineum in the form of counterirritation, heat, cupping, leeches and the like. Mitchell,[2] in 1904, suggested that the beneficial effects of horseback riding on hypertrophy of the prostate is brought about by a kind of massage of the prostate gland from the alternating pressure as the rider rose and fell to the horse's motion.

* From the Santa Barbara Clinic.
* Read before the Section on Urology at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.
1. Posner, cited by Fuller: Disorders of the Male Sexual Organs, 1895.
2. Mitchell, cited by Cohen: System of Physiologic Therapeutics 7: 115.

The technic or method of massage has passed through stages of experimentation. When first adopted, the procedure was to massage around the prostate with a circular rotatory motion of the forefinger, but not to massage directly over the gland. A Berlin surgeon made firm pressure over the soft spots, but left the remainder of the gland untouched. An external method is to massage the perineum with stroking and friction movements. Another method is to knead the prostate between the thumb, placed externally on the perineum, and the index finger supporting the gland from within the rectum. A technic popular with many genito-urinary surgeons is as follows: The patient assumes the erect-flexed, Sims or knee-elbow position. The protected index finger is inserted within the rectum, and gentle to firm pressure made first over one lobe and then over the other, with a stroking downward movement directed toward the openings of the prostatic ducts in the deep urethra. Finally the finger is drawn from above downward over the posterior urethra so as to express secretions from the sinus pocularis and terminations of the ejaculatory ducts. Massage should be continued from one to three minutes. Mild massage may be repeated twice or, exceptionally, three times a week; vigorous massage not more often than once a week.

Instrumental massage of the prostate and seminal vesicles is not widely favored. The more inaccessible parts of these structures may be reached with a metal or hard rubber masseur, the use of which is, however, open to the objection that the manipulation and pressure are not accurately guided by the sense of touch. Some operators prefer the bimanual method of massage for the seminal vesicles, in which counterpressure is made with the left hand placed on the abdomen above the symphysis pubis.

Massage manipulation may or may not include stripping the seminal vesicles, though the latter procedure generally is attempted only in the presence of well defined chronic seminal vesiculitis. Some proceed with treatment based on the belief that in case of infection both the prostate and the seminal vesicles are involved together. Lydston [3] aptly states that "expression of secretions from affected glandular structures is least important," and that the therapeutic benefit derived from massage treatment consists more in stimulating circulation and increasing absorption. Schmidt [4] says that the prompt and regular removal of accumulated secretion is desirable, and Keyes [5] states that the prostatic massage is an unphysiologic attempt to empty the prostate of secretions, which is often not nearly so beneficial as regular sexual intercourse would be, if permitted, were it not for social and hygienic obligations.

For purposes of discussion, prostatic massage may be said to be most beneficial in three types of cases: simple catarrhal prostatitis, chronic parenchymatous prostatitis, and atonic or atrophic conditions of the prostate and seminal vesicles.

Simple catarrhal prostatitis generally accompanies or follows an initial attack of gonorrheal urethritis in young men. The symptoms usually are mild, and may be no more than increased frequency of urination with persistent mucopurulent discharge at the meatus. Such a case responds well to mild prostatic massage combined with appropiate urethral treatment. The swollen prostate is emptied of its catarrhal contents by drainage and absorption, and the return to normal is often surprisingly rapid.

The largest group of cases come under the second classification of chronic parenchymatous prostatitis. In this category may be placed patients who have had gonorrhea two or more times, or who have had at any time a complication of epididymitis, seminal vesiculitis, abscess or stricture. Simple chronic parenchymatous prostatitis yields to well regulated treatment carried out over a sufficient length of time. The crux of the treatment consists in intelligent, thorough prostatic massage combined with appropriate treatment of contiguous structures. The type of urethral treatment varies greatly with individual operators—irrigations, instillations, topical applications, diathermy and dilatations each have a place fitting the individual case. Sitz baths and psychophore treatments hasten the reparative process. Relief of symptoms, cessation of the gleety discharge, urine free from pus and shreds, and three reliable negative bacteriologic examinations of the expressed prostatic fluid, constitute a clinical cure.

Chronic parenchymatous prostatitis complicated by stricture, abscess and seminal vesicle or epididymal infection is more resistant to treatment. Prostatic massage gives only temporary relief in many of these cases. Subsidence of the prostatic infection depends in a large measure on disappearance of infection in other parts of the genital tract. The prostate, because of its location at the neck of the bladder and intimate relation to associated structures, is the seat of persistent infection. In gonorrhea our attention is directed early to prostate involvement, and our treatment may be confined strictly to this organ, permitting minor points of infection in the seminal vesicles, vasa deferentia, epididymides and urethra to remain untreated. Resistant or recurrent cases of prostatitis, seminal vesiculitis and epididymitis which do not yield to standard methods of treatment within a reasonable length of time should be given the benefit of operative interference. Vasotomy, epididymotomy, seminal vesiculotomy or total extirpation of the diseased structures may then be advisable.

Atonic or atrophic conditions of the prostate and seminal vesicles include cases of prostatorrhea, spermatorrhea, premature ejaculation and impotency. These conditions are helped by massage of the prostate, the results depending on the age of the patient, his general state of health, and the primary etiologic factor. Prostatorrhea and spermatorrhea occur more commonly in young men, who may or may not be venereally infected. Local treatment by massage is usually effective.

Premature ejaculation, impotence or failing sexual vigor occur more commonly in men past 40 years of age. Usually the primary etiologic factor may be traced to gonorrheal or syphilitic infection, and alcoholic or sexual excess. In such conditions, prostatic massage is helpful and may postpone or prevent complete impotence; but results are far from satisfactory.

A fourth condition, in which prostatic massage serves to tide a patient over an attack, is the acute congestion occurring frequently in benign hypertrophy. Careful massage gives relief in many of these cases. Kretschmer [6] has compiled five cases of true calculi expressed from the prostate by prostatic massage.

3. Lydston: Massage of the Prostate, Chicago M. Rec. **7**: 412, 1895.
4. Schmidt: Indications and Limitations of Massage of the Prostate Gland, Chicago M. Rec. **22**: 13, 1902.
5. Keyes, E. L., Jr.: The Treatment of Gonorrhea of the Male Urethra, J. A. M. A. **75**: 1325 (Nov. 13) 1920.
6. Kretschmer: True Prostatic Calculi, Surg., Gynec. & Obst. **26**: 70 (Jan.) 1918.

Diagnostic prostatic massage is a procedure of importance to the general physician looking for foci of infection, especially in arthritic and neuralgic disturbances. Both Lowsley [7] and Pelouze [8] have recently called attention to the frequent connection between the arthritides and dormant gonorrheal or secondary bacterial infections of the prostate and seminal vesicles. "In many patients suffering from toxic absorption from a focus of infection in the prostate, there occurs a great increase in symptoms within twelve hours following prostatic massage." This reaction generally is followed by distinct improvement in the patient's condition.

Prostatic massage should be avoided in all acute primary or recurring inflammatory conditions of the urogenital tract. Acute epididymitis which follows too vigorous or too early prostatic massage is a distressing complication for which the operator is frequently blamed by the patient. Barringer emphasizes the importance of gentleness in performing prostatic massage at first, no matter how chronic the case. Some believe that old chronic cases do better under prolonged gentle massage than under vigorous strippings.

Pelouze [9] states that "there is evidence that persistent prostatic massage has a decided tendency to light up tuberculous foci in other parts of the body, particularly in the lungs, and in the epididimides." The lymphatics of the prostate act as a natural defense against infection. Such a barrier may be broken down by manipulation at the improper moment, permitting the escape of infectious material into the seminal sacs, vasa deferentia, epididymis tubules, and even into the general circulation. It is to be avoided in marked neurotic and asthenic states.

Conditions of the rectum which delay and interfere with massage of the prostate are painful or bleeding hemorrhoids, anal fissures or proctitis.

A theoretical discussion of the effects of massage on the prostate gland should include consideration of the physiologic and pathologic changes produced in the genital tract with reference to certain nervous and internal secretory reactions.

Massage of a part increases the amount and flow of arterial blood, increases the venous outflow, promotes diapedesis of leukocytes, and tends to remove cellular débris. To quote Lockhart,[10] the effect of massage on the prostate consists in emptying the pus pockets into the urethra, relieving the engorged blood vessels and lymphatics of the stroma, and stimulating the reparative processes by inducing a more liberal supply of fresh blood and lymph to the entire organ.

We note best the effect of massage in cases of simple catarrhal prostatitis. The retrogressive course of the inflammatory process may be followed by rectal touch and microscopic examination of the expressed prostate fluid. A gland, at first swollen, tense and firm, gradually, sometimes rapidly, returns to its normal size and consistency. At the onset, the expressed prostatic secretions contain an abundance of mucus, pus cells, bacteria and débris, which disappear in direct proportion to the virulence of the infection and the regenerative power of the individual.

Similar, slower retrogressive changes are noted in cases of chronic parenchymatous prostatitis. When complicated by points of infection elsewhere along the genital tract, improvement is still more retarded. It is observed that massage of the prostate alone exerts a beneficial action on seminal vesiculitis. This is accomplished by promoting drainage from these structures through reflex stimulation of muscular, peristaltic contractions.

In atonic prostatorrhea, spermatorrhea or impotence, massage of the prostate strengthens relaxed muscle fibers and stimulates greater cellular activity of secreting surfaces.

Among the minor nerve reflexes brought on by massage of the prostate gland is tonic contraction of the internal vesicular sphincter. The patient frequently is unable to urinate following prostatic massage until voluntary effort effects relaxation of the sphincter. Syncope or fainting induced by massage through the rectum is a psychic or autonomic nerve reaction. The immediate effect of prostatic massage on blood pressure is to cause an initial rise, followed by a fall which in some instances is quite remarkable, with return to normal not later than ten minutes after the manipulation.[11] Stimulation of the nervi erigentes with erection is not uncommon.

We accept the researches of Serrallach and Pares,[12] of Macht,[13] of Matsumoto, of Bogoslowsky and Korentchevsky,[14] of Dubois and Boulet,[16] and of Rohleder [16] on the internal secretion of the prostate. Pousson [17] believes that the absorption of the toxic products of the adenomatous prostate exerts a noxious action on the general health. Expression of these toxic products by massage may lessen such deleterious effects.

It is believed that the prostate acts as a powerful stimulant to the internal secretion of the testicle, in which case the stimulating effect of massage on the prostate should increase the activity of both the prostate and the testicle, bringing about a sense of well-being and renewed vigor in men suffering from prostatism.

In the dog, the bladder, ureter, vasa deferentia and seminal vesicles are all stimulated in vitro by aqueous extracts of the mammalian prostate, including the human. It is reasonable to assume that similar contraction of homologous structures may be induced in man by stimulation of the internal secretion of the prostate.

ABSTRACT OF DISCUSSION

DR. JAMES A. GARDNER, Buffalo: We should emphasize the fact that unless the bladder is full it is as impossible to massage as it is to press against a curtain. Many men attempt massage with the bladder empty, and the result is unsatisfactory.

DR. BRANSFORD LEWIS, St. Louis: There is a very considerable need for more teaching about massage. I have come to that conclusion because of the occasional encounters with patients who abuse most emphatically some of the physicians who have previously massaged them. I have never seen an instance in which it was necessary to go at these patients with hammer and tongs. In many instances the doctor jams

7. Lowsley, O. S.: Rôle of Prostate and Seminal Vesicles in Arthritis, New York M. J. **113**: 641 (May 4) 1921.
8. Pelouze, P. S.: The Rôle of the Prostate in Focal Infection, Med. Rec. **100**: 412 (Sept. 3) 1921.
9. Pelouze, P. S.: J. Urol. **1**: 367 (Aug.) 1917.
10. Lockhart, W. T.: Prostate Massage, Canad. M. A. J. **9**: 223 (March) 1919.
11. Cowie: Some Clinical Observations on Blood Pressure, with Special Reference to the Effect of Prostatic Massage, Am. Med. **5**: 632, 1910.
12. Serrallach and Pares: La sécrétions internes de la prostate, Ann. d. mal. d. org. gén.-urin. **29**: 625, 1911.
13. Macht: Physiological and Pharmacological Studies of the Prostate Gland, J. Urol. **4**: 115 (April) 1920.
14. Bogoslowsky and Korentschevsky: The Internal Secretion of the Prostate and Its Relation to the Testes, Comp. rend. Soc. de biol. **82**: 718, 1920.
15. Dubois and Boulet: Compt. rend. Soc. de Biol. **82**: 1054, 1919.
16. Rohleder, H.: Deutsch. med. Wchnschr. **46**: 70 (Jan. 13) 1920.
17. Pousson: Bull. Méd. **35**: 595 (July 23) 1920.

through a forefinger in a most unceremonious way, without glove or lubricant. Furthermore, the effects are not good when the massage is administered improperly. One can get better effects with gentle massage than with that which is too vigorous or prolonged. Dr. Farman called attention to the relation of massage in the presence of a strictured urethra. I recently met a patient who had been treated with massage nearly every day for a year. When I examined him, I found a stricture in the bulbous part of the urethra that would admit only a No. 18 sound. What could be accomplished by massage in the face of a stricture of such severity? There is no place for instrumental massage. In corpulent persons, when one cannot get up as far as necessary with the forefinger, I have used an instrument devised by Lydston. I get a good effect with that. I recently devised a little instrument for use in suprapubic prostatectomy. After the suprapubic opening is made, this prostatic elevator is inserted into the rectum. Because of the spoonshape of the instrument one can get leverage under the prostate, and then by means of the abrupt shoulder one can lift up the prostate. In addition to that, the handle is made so that it may be used for prostatic and vesicular massage.

DR. HERMAN L. KRETSCHMER, Chicago: The doctor stated that some one said massage of the prostate was likely to light up some distant focus of tuberculosis. It seems hard to understand this unless the patient had tuberculosis of the prostate and it does not seem possible that any one would massage a tuberculous prostate. I wish to emphasize what Dr. Lewis has said. I often wonder whether we give as much time and thought to the details of carrying out this treatment as we should. Those who teach in the medical schools have been neglectful of this subject. In teaching students we should try to instruct them to massage the prostate properly. I wonder how many in the section had this instruction in massage.

DR. A. I. FOLSOM, Dallas, Texas: In any inflammatory condition the local use of heat is very beneficial. I have a box measuring about 2 by 2 by 2 feet, with a lid, much like a commode seat, containing two sets of lamps. The two together are sometimes too much for the patient to stand, and if so he can snap one off until the heat is regulated. The patient sits on this box for from fifteen to twenty minutes, thus heating the prostate and the surrounding region, and I have seen this soften up the secretions so that the secretion after massage is materially increased. The method has been very beneficial and the patients have all been enthusiastic about it. Not only does it help in the massage of this gland, but the heat, by inducing hyperemia, helps to get rid of the condition in the gland.

DR. GEORGE F. FARMAN, Santa Barbara, Calif.: Each case of prostatitis is more of an individual affair than we make it, in the large dispensaries especially. As was mentioned before, the orderlies often give this routine treatment, but we do not get the same effect; and the patients do not respond properly unless we take a personal interest in them and carry them along as individual cases. I agree that heat plus massage is really more effective than either one alone.

Rules for Typhoid Carriers.—One of the most notable steps taken by the bureau of preventable diseases of the Department of Health of New York City during the past year has been the formation of a set of regulations for the supervision of typhoid carriers. These rules instruct the carrier to have nothing to do with food or drink to be used by others, not to go to the icebox or refrigerator and not to hand anything at the table. Every bowel movement not passed into a toilet flushed with water must be disinfected by an effective disinfectant, such as chlorinated lime. If an outside privy is used, it should be kept disinfected by quicklime. The carrier should not use a toilet away from home during the day if he can avoid doing so, and should always wash his hands with plenty of soap and water after using a toilet. His underclothing should be disinfected before being sent to the laundry. Every person with whom a carrier lives must be immunized against typhoid fever. Typhoid carriers should keep the health department informed of their whereabouts and should have their stools examined from time to time.

EXTRAORDINARY DEVELOPMENT OF THE TACTILE AND OLFACTORY SENSES

COMPENSATORY FOR LOSS OF SIGHT AND HEARING; WITH DEMONSTRATION OF THE REMARKABLE CASE OF WILLETTA HUGGINS *

THOMAS J. WILLIAMS M.D., F.R.C.S. (EDIN.)
CHICAGO

The recent communications of Prof. Joseph Jastrow [1] of the University of Wisconsin denying unusual ability in the case of Willetta Huggins makes it imperative, in behalf of scientific facts, that we immediately publish what work has already been completed on the case. I had hoped to make our investigations more complete before publication, as we are still conducting experiments and making observations.

There can be no doubt that through all the ages that man has inhabited the earth, the dual affliction of deafness and blindness has often been borne by humankind. However, we have, prior to recent times, no authentic and detailed record of those so unfortunate. It is more than likely that few, if any, so afflicted congenitally ever lived beyond infancy or early childhood, for, under the iron rule of the survival of the fittest, they had no place in the scheme of human existence.

There are two other cases comparatively recent and both women, comparable in some respects to Willetta Huggins. They are Laura Bridgman, a pupil of Samuel G. Howe, and Helen Keller. Of these a more or less definite record has been placed in scientific literature. In comparing the case here reported with that of Laura Bridgman, Helen Keller, or any of those more recently published, it must be borne in mind that these subjects, especially Miss Keller, represent an exceptionally high grade of intelligence, which, once put into communication with the external world, was able to surmount the great obstacles which lack of sight and hearing placed in its path. The mental and physical handicaps of Willetta make her present attainments all the more remarkable, and this fact should be kept in mind, in order to arrive at a just comparison with other deaf-and-blind subjects.[2] However, in all fairness, we should not forget that our present subject possessed both sight and hearing for, at least, the first twelve years of her life.

Details of her family history have been obtained from Willetta, through Dr. J. P. Thorne, superintendent, and Mrs. Hooper of the Wisconsin School for the Blind, and through schoolteachers and city nurses.

Willetta Huggins was born at Eau Claire, Wis., March 26, 1905, so she is now 17 years old. Her father died when she was 4, and her mother died in the county tuberculosis sanatorium at Eau Claire five years later.

The child was found living with her grandmother by a field worker for the Wisconsin School for the Blind, in the summer of 1915, when she was 10 years of age. In September of that year she was admitted to the institution because of defective vision, and it was

* This is abbreviated in THE JOURNAL, as space could not be given to the complete article, which includes observations of others. The whole is incorporated in reprints, which may be obtained on application to the author.

1. Jastrow, Joseph: "The Will to Believe," J. A. M. A. 78: 1891 (June 17) 1922; 79: 151 (July 8) 1922.

2. For information concerning Laura Bridgman and Helen Keller, I am indebted to the "Life of Laura Dewey Bridgman," by Mary S. Samson, her teacher, and biographical addenda to Helen Keller's own "Story of My Life."

later found that she also had defective hearing, especially in the right ear. She states that she has always had "weak eyes and a running from the right ear," that she was always deaf in her right ear, and that her hearing in the left ear seems to have been subnormal.

BECOMES DEAF

In October, 1919, following a severe "catarrhal cold," she very suddenly—over night, it seems—lost the remaining sense of hearing in the left ear. Though no history of illness has been obtained except the ordinary diseases of childhood and possibly undernourishment in early life, "colds in the head" have been so frequent that to her it seems she was never without one. Her vision, too, has apparently always been very defective.

Up to the time of her entrance into the school, Willetta appears to have possessed some sense of both sight and hearing, but from the age of 10 both faculties rapidly diminished. When she was 15, Mr. Hooper placed her under the care of Dr. J. P. Thorne of Janesville, who states that he found her totally deaf at that time. On his examination of her ears then he discovered that she had an acute suppurative otitis media in the right ear, which still persists.

As she was a state ward, Dr. Thorne referred the patient (in February, 1920) to the University Clinic at Madison for treatment and observation by the eye and ear department, and she remained there six weeks. According to a communication which I received, Dec. 1, 1921, from Dr. W. F. Lorenz of the department of psychiatry, the result of a Wassermann test on Willetta was negative. Two blood Wassermann tests that I have since had made also proved negative. She was returned to the school from the clinic with the report that she was "incurably deaf, and of a subnormal mentality of the moron type." According to Superintendent Hooper, Professor Jastrow had but one opportunity to examine her, and then for only two hours. This was on June 11, 1921.

Owing to her physical handicap, without private or institutional assistance, she had not been able to progress further than the second grade of school at the age of 10, and even after her entrance into the Wisconsin School for the Blind, the progressive diminution of her sight and hearing apparently made her mental development almost impossible. The findings of the university clinic confirmed the observations already made by Mr. Hooper and his assistants and, realizing that she was now totally deaf, they proceeded to assist her by having her taught the alphabet for the deaf. In this, at that time, she made very slow progress.

BECOMES BLIND

Meantime, her vision failed, and in 1920, following a severe cold, similar to the one that terminated her hearing about a year before, she just as suddenly became totally blind.

On thus becoming excommunicated from the world by blindness and deafness almost simultaneously, her reaction was interesting. She developed a peculiar, morbid, uninterested, morose attitude toward everything. She was nearly 15 now and, as she could neither see nor hear, she rapidly became listless and apathetic, with the minimum mental reaction to her environment. Physically, her condition was fairly good and of normal development for a girl of 15 years. The school authorities had had considerable experience with similar cases, but even to them her mental condition was pathetically interesting, because of such unusual morbidity in so young a person, when the natural exuberance of youth generally overcomes even the tragedy of deafness and blindness.

During 1920, Miss Smith, a teacher of the deaf at Eau Claire, informed Willetta of Helen Keller's method of communication. Willetta became interested and gradually began to show mental development, emerging from her shell of indifference with an eagerness and alertness transcending anything that had seemed possible to her when she possessed both partial vision and hearing. She piloted herself from the dark silence, and discovered hidden paths which took her back into communication with the world she had thought forever lost.

I was first called to Wisconsin in consultation on Willetta's case, by Dr. J. P. Thorne, oculist and aurist for the Wisconsin School for the Blind, during November, 1921. I had previously discussed the case with him and was interested in his observations. Since then I have made other visits to Wisconsin to study the case, and have had Willetta brought to Chicago once for a few days during which I presented her before the Chicago Medical Society and its Evanston branch. I have already spent more than seventy-five hours with her, and feel that I have only begun to realize her value as a scientific subject. The following is what I have observed after numerous severe and exacting tests.

"HEARS" WITH FINGER TIPS

She learned that, by placing her finger tips on her phonating larynx, she could "feel" what she said. She discovered that she could discern what others said by placing her fingers over their larynges; and as time went on, she advanced still further and found that she could hear through her finger tips when they rested not only on the larynx but also on the head or chest of the speaker. She soon learned that the vibrations could be "heard" if transmitted by intervening objects, such as a billiard cue, one end resting on the speaker's head or against his chest, the other end in her hand. She heard men better than women, because of the coarser vibrations. She heard speakers with deep voices better than those whose voices were pitched higher, and could not only "hear" but also distinguish the speakers. She learned their "different feel" as we learn the difference in voices. She could carry on a conversation, with only the air as a medium of vibration, by holding a sheet of paper between both hands, the speaker talking "against" it. The school authorities state that she can use a telephone and read its messages by her fingers held over the receiver, but this test proved unsuccessful each time I tried it, though I found her very efficient in the audiphone test, although the latter, with a short receiver wire, would not exclude hearing. She can hold her fingers over the end of a 10 foot tube, as a mailing tube, and carry on a conversation with the speaker at the other end. She can hear an orchestra or lecture by placing her fingers over the ear pieces of the oral phones such as are now in use. I attended the Easter service with her and she told me correctly what was on the program, having apparently obtained this information by the assistance of her finger tip placed on the receiver of her audiphone. This, she carries constantly with her.

Her fine sense of touch does not stop here. She can actually read by running her finger tips over newspaper headings of half-inch or even smaller type, and

V. 19

she can readily and rapidly distinguish the denomination of paper money by feeling the imprint of the numbers and the difference of the designs.

In spite of the fact that she is blindfolded and that all precautions are taken to eliminate the possibility of her gaining information by either sight or hearing, it is almost impossible to believe what she does, and equally uncanny to witness her practically faultless demonstrations.

"SMELLS" COLORS

Her remarkable powers do not cease here. She has also developed her sense of smell to an unheard of degree. This was first discovered in her sewing class, when it was found that she was able to distinguish the different colors of thread by smelling them. She was able to state not only which student had made a certain dress, but also which instructors had supervised the making of that dress, by the individual odors imparted.

She can easily distinguish the colors of flowers. At first I thought that this was because of the perfume, but found that she was able to distinguish the colors and different shades of color in no less than eight different colored flowers of one kind (asters or zinnias) by her sense of smell alone, with both eyes completely blindfolded.

At one of my examinations, I handed her a sweater, the body of which was orchid color with a deep hem of purple, the weave being identical. She smelled it and said it was lavender in the body, but that there was a deep purple color there too. I asked her to find the line of demarcation between the two colors, which she did as accurately as if she were able to see.

TESTED IN THE DARK

I took some Holmgren's yarns, handed a different color to each of eight persons present, told them to remember the color given them, and after turning out the light, each of us gropingly found our way before her with our yarns, which she placed in turn to her nose and correctly named the colors and tints (whether light or dark) of each.

One of the women present wore a hat on which was embroidered a three-color design. Willetta correctly named the three colors, the color of the hat and its lining.

I gave her a string of colored beads and a set of different colored glass lenses, but with these she was lost. She said she could not smell these because "they keep their smell inside of them." She gets no appreciable odor from them or from any glazed surfaces as, for instance, pottery, though she can distinguish unglazed pottery fairly well. She states that all glass "smells green," so she cannot detect other colors in glass.

Through her sense of smell she states that she can determine the number of people in the room with her, if there are not too many. She correctly stated that there were eight persons present during one of my examinations, and she was even able to tell when the large family cat meandered in and out.

However, she became quite tired during one of my examinations, and toward the end I found she made an occasional mistake, which she corrected on being allowed to go to the open window and breathe freely for a while. She finds that a close, stuffy room, without frequent air changes, interferes considerably with her ability to distinguish colors. There are some odors that seem to produce a sense of pain to her—for instance, the odor of a narcissus seems to hurt her—much the same, perhaps, as the vibrations of a Bárány noise apparatus produces a sense of pain in her, owing to the tremendous vibrations.

She seems able to tell when she is being looked at, and dislikes being the center of interest. She is extremely sensitive, particularly to the mental attitude of those about her, and is especially resentful of having her veracity questioned. During one of my examinations, when I had sealed her eyes with cotton, several layers of adhesive plaster and bandages to prevent any possibility of vision, she felt it so keenly that she would neither smell a color correctly nor feel the denomination of paper money. I let her rest for about three hours with the adhesive blindfold intact, and, after joking and laughing with her for a time, proceeded with the tests as successfully as at any time. She is temperamental and will work accurately on the experiments only when the examiner is kind, patient and considerate, and betrays no evidence of skepticism.

I here desire to emphasize the fact that no stranger can examine her and obtain accurate and conclusive results by one examination, even should it be of several hours' duration. It requires infinite patience and an acquaintanceship that allows her to work in sympathy with the examiner.

I must admit, in spite of the exhaustive tests to which I have submitted her, that it has been very difficult for me to remove all feeling of doubt and skepticism. She is so conscious of her surroundings and environment that it is almost impossible to believe that she has not some vision and some hearing. On numerous occasions I have tested her for both, but have been wholly unable to obtain any definite proof that she possesses any remnant of either.

PHYSICAL EXAMINATION

Willetta is a well grown and well nourished girl of 17, of the brunette type, with rather high cheek bones. Her knee jerks and Babinski reflexes are normal. Her eyes are brown, and slightly below the average in size. Voluntary eye movement is free in all directions, although a somewhat nystagmoid horizontal concomitant wandering without design is observable at times. This nystagmus is much increased, like an intentional tremor, when she is told to keep the eyes quiet. At times, her eyes have the usual empty, shifting and meaningless appearance of blind eyes, but at other times it is extremely difficult even to believe her blind, because she can look at one with eyes apparently full of recognition and understanding. This is one of the greatest obstacles to a conviction of her blindness. The lid margins and tear ducts are normal, and the conjunctivae smooth and clear. The cornea has normal reflection of external objects, but deep in the corneal substance opacities are observable, somewhat pigmented, and ramified by a few contracted blood vessels. At one place in the left cornea this opacity is somewhat stellate and radiating in type. The keratitis is of the deep interstitial type, with fine, amorphous scarring. In each eye the opacities are located mostly in the 7 to 11 o'clock sector, and are suggestive of syphilitic infection. The anterior chambers are of medium depth. The pupils are regular and symmetrical, about 4 mm. in diameter, with good brisk reaction to light.

The pupils were well dilated and the fundi examined. There was a fairly bright red reflex in each eye with which the corneal opacities interfered considerably. The media were otherwise clear, with no apparent vitreous opacities. The fundi were difficult to examine because of the nystagmoid movements referred to above and the corneal opacities. The disks seemed medium pink and fairly well outlined. There is no cupping and the vessels are fairly well proportioned, straight and well distributed. Maculae and the remainder of the fundi seem normal, and I can discern no choroidal or other pathologic condition of the fundi. There is certainly no marked optic atrophy or other gross pathologic condition

observable in either eye, and I can state positively that if she is blind, the pathologic change lies posterior to the eyeballs.

Examination of the nose, throat and ears disclosed no enlarged cervical glands. Her teeth are fairly good, with no Hutchinson pegs. The tonsils have been removed by Dr. Wolkoski of Chippewa Falls.

Anteriorly, the nasal septum is slightly deviated, but there is a moderate breathing space on both sides with but little evidence of discharge. There is a small spur on the left septal aspect, and the left inferior turbinate is slightly enlarged. The nose is practically normal, on the whole, showing no pathologic changes.

The canal of the left ear is clean, with the membrana tympani revealing a normal cone of light except for some scarring near the umbo, where there is a very slight retraction; otherwise the external objective examination is negative. The canal of the right ear contains a small, thready stream of mucopurulent discharge, escaping from a 2 to 3 mm. slightly ovoid perforation, through which faint pulsation can be seen. The handle of the malleus is missing, and considerable scarring can be detected about the perforation, though it is fairly thin lipped. The appearance here represents the usual pathologic changes of chronic suppurative otitis media. Objectively, one is at as much loss to explain her deafness as her blindness. Further blood and spinal tests will be made.

Subjectively, the patient refused to admit the remotest remnant of hearing in either ear. She readily admits feeling the vibrations of the tuning fork and Bárány noise apparatus, but she positively states that she cannot hear them. She can feel, and emphatically reiterates that she cannot hear, the tuning forks vibrating on the head (not lateralized) about as long as one can usually get bone conduction, but she can feel it vibrate even after we cannot normally detect air vibration, if the fork is in contact with her left middle finger. This is her most sensitive finger. The right middle finger is next in degree of sensitiveness, and the left forefinger is third. The right forefinger has lost all sensation distal to the last joint within the last year, the result of an infection, apparently a paronychia.

She can pitch her voice correctly with a vibrating tuning fork even after the fork cannot normally be heard by air conduction by holding it in finger contact, when her arm is fully outstretched, and can even pitch with the lower notes of the Galton whistle, which she also detects, according to her statement, only by her sensitive finger tips held in contact with the instrument.

Rotation tests, with the head slightly forward, produced moderate dizziness and beginning nausea, but no change in the eyes except that they seemed to be turned rather more toward the side opposite to the direction of rotation; and her irregular nystagmus reading was extremely inconstant, making it difficult to base any reliable conclusion thereon.

I must admit that, from the objective point of view, I am wholly unable to account for her blindness or deafness, except that both, if present, must be due to central, probably cortical, pathologic changes. The observation of the eyes and what we have been able to learn about the family history, despite the negative Wassermann report, point to a syphilitic infection, which, of course, could be sufficient to account for any pathologic condition found, but certainly can hardly be credited with the extraordinary constructive developments of her case.

The possibility of malingering is, of course, very great, and I have given it due consideration, as I most fully realize that her peculiar abilities will tax ordinary credulity to a point at which not only her sincerity but my observing powers will be severely questioned. In fact, I questioned them myself for no brief period. But, after the most deliberate observation of the subject, and considering her lack of motive for malingering, combined with the tests carried out to the best of my ability, and despite the apparent discrepancy between the objective manifestations and the physical findings, I am convinced that the girl is both blind and deaf; that her ability to comprehend speech by receiving the vibrations with her fingers and to distinguish colors by recognizing a distinctive odor for each shade is genuine, and that she presents an example of the development of certain special senses replacing those lost, of which no exact parallel has yet been recorded in any medical or other scientific literature.

I have every faith in the honesty and sincerity of Professor Jastrow, but he simply could not "see the forest because of the trees." His letter expresses my first impressions rather accurately; but he was misled by limited examination and natural assumptions, and I know that he will share our enthusiasm and interest in the future developments of this case.

My purpose with this article will be accomplished if this statement is accepted as a warning and an appeal to all interested in science to examine most carefully all cases presented; to judge only when all the obtainable evidence is accumulated, and then if necessary to revamp antiquated beliefs to conform to facts as developed rather than to make facts conform to antediluvian creeds, for thus do we arrive at the road to progress.

30 North Michigan Avenue.

RESUSCITATION BY THE INTRACARDIAC INJECTION OF EPINEPHRIN *

JULIUS GOTTESMAN, M.D.
NEW YORK

Instances of recovery, after failure of the heart action, by the injection of epinephrin into the heart are sufficiently rare to justify the report of a case in which this occurred:

REPORT OF CASE

S. K., a man, aged 73, with generalized arteriosclerosis, was admitted to the hospital, June 26, 1921, complaining of severe pain in the right leg due to trophic changes. The patient was in fairly good condition for his age, although there was marked emphysema of the lungs, and emaciation. The heart sounds were distant and of poor quality. The arteries of the extremities were tortuous and much thickened. There was marked atrophy of the muscles of the right lower extremity. Neither the dorsalis pedis nor the popliteal arteries could be felt. The Wassermann blood test was negative. The urine contained a trace of albumin, but no casts. The blood analysis revealed the urea nitrogen as 12.2. The systolic blood pressure was 176, diastolic 80.

The pain continued to be very severe, and, September 20, amputation of the affected extremity under spinal anesthesia was attempted. The patient was placed in a sitting position on the operating table, and after 10 c.c. of spinal fluid had been withdrawn, 10 c.c. of 1 per cent. solution of procain was injected into the spinal canal, followed almost immediately by drowsiness, cyanosis and shallow respiration. The heart action remained good for about five minutes, when the patient became unconscious, respiration ceased, and the pulse and the heart sounds could not be detected. Artificial respiration was begun and various cardiac stimulants, including caffein, camphor and epinephrin, were given hypodermically, but without effect; the breathing had ceased and the heart action seemed to have ceased. Twenty minims (1.2 c.c.) of epinephrin, full strength, was then injected into the left auricle by puncture of the chest wall between the left third and fourth ribs, the position in the cavity of the heart having been determined by aspiration of blood. There was immediate reappearance of the radial pulse and of feeble

* From the Surgical Service, Montefiore Hospital.

respiratory efforts. This was followed by the return of the heart sounds. The cyanosis was gradually replaced by normal color, and within a few minutes, respiration became regular, the heart action good, and consciousness was restored. After this the patient made an uneventful recovery from his symptoms.

As the pain continued for a number of months, the extremity was finally amputated above the knee, under gas and oxygen anesthesia. Recovery was prompt and the patient was discharged from the hospital four months after operation.

All the successful cases of resuscitation with intracardiac injections of epinephrin reported in the literature occurred in heart failure following anesthesia, asphyxia, or severe physical or electrical shock, when there was no distinct contraindication to the restoration of the cardiac action, to wit, the presence of a prolonged illness or disease. Only in this type of case would such measures have any permanent effects.

Emergency measures used to restore cardiac activity act either through direct action on the cardiac muscle, as in cardiac massage through the abdomen, or through the action of a drug on the myocardium or on the neuromuscular junctions. Epinephrin injected directly into the heart combines the advantages of the two, the puncture mechanically stimulating the heart muscle, and the drug acting on the neuromuscular junctions.

129 East Sixty-Ninth Street.

Clinical Notes, Suggestions, and New Instruments

CARCINOMA OF THE ESOPHAGUS, WITH PERFORATION OF THE AORTA

JOSEPH J. MEYER, M.D., JOHNSTOWN, PA.

As perforation of the aorta is a rather infrequent complication of cancer of the esophagus, this case is reported so that it may be recorded with the relatively few cases so far entered in medical literature. Knaut[1] reports a series of fifty cases up to 1896. Carr and Hanford[2] compiled reports of twenty-one cases occurring since 1896, and added one of their own, making a total of twenty-two. The following case is here added:

An Austrian housewife, aged 47, entered the Conemaugh Valley Memorial Hospital, Oct. 17, 1921, for the relief of vomiting. The family history was unimportant. The patient had always enjoyed excellent health until the present illness began. She did not remember having any sicknesses. She had four children, two of whom were living and well. There had been no miscarriages. The menstrual history was normal. The present illness began about two months before with vomiting (on observation it was found that what the patient thought was vomiting was really a regurgitation), particularly noticeable with solid and semisolid foods. The patient could swallow liquids, if taken in small amounts and swallowed slowly. She complained of pain beneath the sternum and in the stomach, with a sense of fulness in the epigastrium. The appetite was good. There was considerable eructation of gas. She vomited (?) undigested food. The bowels had been fairly regular until the last month; there had been no movement during the last week. She complained of loss of weight and weakness. There were no renal symptoms and no headache.

The patient was fairly well developed, poorly nourished and anemic, and appeared normal except for the presence of an umbilical hernia. The temperature varied between 97 and 101 F.; the pulse, between 70 and 120; the respiration, between 20 and 35. The urine was amber, clear, acid with a specific gravity of 1.020, a thick sediment, a medium trace of albumin, no sugar, and a heavy trace of acetone. There were a few hyaline casts and a moderate amount of pus cells. Blood examination revealed: hemoglobin, 70 per cent.; erythrocytes, 4,336,000; leukocytes, 10,600; polymorphonuclears, 61 per cent.; large lymphocytes, 4 per cent.; small lymphocytes, 33 per cent.; transitionals, 1 per cent.; basophils, 1 per cent. The Wassermann reaction was negative. The coagulation time was four and one-half minutes. Roentgen-ray examination revealed stricture of the esophagus 2 inches from the top of the sternum, rather irregular, and probably malignant.

The patient was unable to swallow anything except for a small amount of liquids. The throat consultant advised against esophagoscopy at this time, and as the patient was failing rapidly, a gastrostomy was performed. After a rather stormy ten days the patient began to improve, and, about December 10, was up and about the ward. Her general condition improved, and she gained slightly in weight. December 29, immediately after going to bed, she was found gasping for breath, and died in a few minutes. There was no bleeding from the mouth.

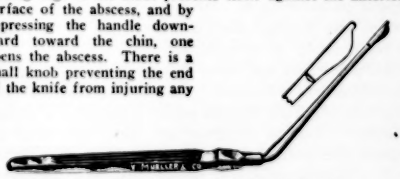
Necropsy revealed a fibrous, malignant growth involving the esophagus, on a level with the bifurcation of the trachea, about 3 inches in length. The lumen was almost occluded, admitting only a small-sized probe. There was an ulcerating area in the center of this growth which invaded the aorta, and here the perforation occurred. The opening into the aorta admitted an ordinary sized lead pencil. The stomach was filled with blood. The gastrostomy opening was in good condition. No metastasis and no other abnormalities were found.

1. Knaut: Inaug. Diss., Berlin, 1896.
2. Carr, J. G., and Hanford, C. M.: Carcinoma of the Esophagus with Perforation of the Aorta, Am. J. M. Sc. 164: 340 (Sept.) 1922.

A NEW INSTRUMENT FOR OPENING ABSCESSES IN THE LARYNGOPHARNYX

I. RUBBERT SMITH, M.B. (TOR.), M.R.C.S. (ENG.), L.R.C.P. (LOND.)
TORONTO

This instrument is to open abscesses in the laryngopharynx. The angle of the handle with the shank is 135 degrees, so that when the instrument is inserted in the pharynx the cutting edge of the blade presents itself against the anterior surface of the abscess, and by depressing the handle downward toward the chin, one opens the abscess. There is a small knob preventing the end of the knife from injuring any of the deeper anatomic parts. The knife itself is bellied near the tip to facilitate the opening of the abscess. This knife can be used with the patient in either the sitting or the lying position with the same advantages.



Knife for opening abscesses in the laryngopharynx.

I had this knife made for me about twelve months ago, and have found it simple, practical and efficient for this purpose.

116 College street.

Menstruation.—I doubt if there is any bodily function in the female which has received more attention from time immemorial than menstruation, and yet we are still groping in regard to the actual cause and the precise significance of it. Its very mysteriousness has led to its becoming surrounded by encrusted masses of superstition and folklore which have, as Novak says in his recent book, "befogged the subject in the minds of both the laity and the profession and inhibited intelligent efforts to study it."—Johnstone, *Edinburgh M. J.*, May, 1922.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 North Dearborn Street - - - Chicago, Ill.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Six dollars per annum in advance

Contributors, subscribers and readers will find important information on the second advertising page following the reading matter

SATURDAY, OCTOBER 14, 1922

TESTS OF ARTIFICIAL RESPIRATION

Artificial respiration is so likely at times to be a life-saving procedure that the fundamental facts in regard to it should be firmly established and clearly understood, especially by the public. Proposals of methods for the resuscitation of persons in whom respiration has been suspended through drowning, electrical shock, injury to the nervous system or other causes have been made by many investigators. Those which advocate the forcible introduction of air into the lungs by means of a special apparatus have not found widespread favor, although some of them have been extensively advertised. When artificial respiration is called for it should be instituted without delay in order to be effective; for this reason, mechanical devices are not always to be depended on for such first aid, because they may not be immediately available. And "immediately" usually means one or two minutes. The more familiar methods depend on securing an expansion of the lungs in the normal way through altering the position of the walls of the chest by an external force.

All physicians and many laymen are familiar with the procedures advocated by Sylvester, Howard and others in which the affected person is placed in a supine position. Various schemes are then employed to expand and contract the chest successively. They have been widely described in popular treatises, and have been taught to many persons. Some time ago, Sir Edward Schäfer [1] recommended what is commonly known as the "prone pressure" method. This consists, in his own words, in laying the subject in the prone posture, preferably on the ground, with a thick folded garment underneath the chest and epigastrium. The operator puts himself athwart or at the side of the subject, facing the head, and places his hand on each side over the lower part of the back (lowest ribs). He then slowly throws the weight of his body forward to bear upon his own arms, and thus presses on the thorax of the subject, and forces air out of the lungs. This being effected, he gradually relaxes the pressure by bringing his own body up again to a more erect position, but without removing the hands.

The Schäfer procedure is not difficult to practice, and seems to be relatively free from injury to the patient. After all, the most important point in any method is to secure adequate ventilation of the lungs. For adult man this means from 5,000 to 6,000 c.c. of air each minute. Schäfer has maintained that the older directions fail to accomplish this. Recently, Burton-Opitz [2] of Columbia University made accurate spirometric measurements of the efficiency of various procedures. The results were most favorable with the prone method. Burton-Opitz has found that the raising of the umbilical region greatly diminishes the downward trend of the pressure, so that the best possible bellows-effects may be obtained. Under these circumstances, it suffices to exert only a very moderate degree of pressure, provided the hands are placed flat against the lower ribs and the pressure is directed inward and upward. It is then an easy matter, he states, to exceed the normal volume of the tidal air by as much as from 100 to 150 c.c. These facts support the conclusions of the Third Resuscitation Commission in urging the immediate manual treatment of those in need of artificial respiration by the prone-pressure method on the spot where they are found. It is alike the simplest and most reliable of the first aid devices.

1. Schäfer, E. A.: Artificial Respiration in Its Physiologic Aspects, J. A. M. A. **51**: 801 (Aug. 29) 1908.

2. Burton-Opitz, Russell: A Comparative Study of the Different Methods of Artificial Respiration, Am. J. Physiol. **61**: 562 (Aug.) 1922.

THE CAPILLARIES OF THE HUMAN SKIN

In his review of the evidence of functional activity of the capillaries and venules, Hooker [3] pointed out that although studies of capillary contractility extend back for a period of fifty years, almost to the time of the discovery of vasomotor nerves, and although the profound significance of the blood stream in the capillary areas for tissue nutrition was recognized at an even earlier period, capillary function is given scant, if any, consideration in discussion of vascular reactions today. The simple hypothesis of vascular control by means of functional activity on the part of the arterioles has been adequate to explain experimental results. Yet, Hooker adds, in recent years a considerable amount of evidence has been collected which goes to show that this conception is inadequate.

An important factor in the revision of our ideas regarding capillary function has been the development of helpful methods of study. Foremost has been Lombard's [4] simple technic whereby a drop of glycerol or transparent oil on the skin, illuminated with a bright light and examined with a suitable binocular microscope, will yield a view of the superficial blood vessels. The procedure has been developed to one of large usefulness. An outcome of the scientific research that it has fostered has been the demonstration that the capillary bed is responsive to both chemical and nervous

3. Hooker, D. R.: Evidence of Functional Activity on the Part of the Capillaries and Venules, Physiol. Rev. **1**: 112 (Jan.) 1921.

4. Lombard: The Blood Pressure in the Arterioles, Capillaries and Small Veins of the Human Skin, Am. J. Physiol. **29**: 335, 1912.

influences. The smallest vessels may participate directly in vascular reactions. Much of the evidence has been furnished by Hooker in this country, and by Krogh in Copenhagen. The latter, in particular, has pointed out how important are the active contraction and relaxation and the shifting number of open capillaries in the regulation of blood distribution and the supply of the tissues. In a recent contribution from Krogh's laboratory, Carrier [5] has demonstrated anew that the diameter of the capillaries is not necessarily dependent on the pressure in the arterioles, but rather on their own tone and state of contraction. They normally contract or relax independently of the pressure behind them, but in response to local or general stimuli. It can be shown that cold produces a contraction of arterioles, with a slowing in the blood stream and contraction of the capillary wall. When the cold becomes extreme, the capillaries are paralyzed, open up, and fill ultimately with venous blood. Studies on the action of drugs applied locally also indicate the power of the capillaries independently to contract or relax.

It is becoming necessary, in the light of this knowledge, to revise our ideas regarding the nature of dermatographism. This term is applied to the vascular cutaneous reaction which may be developed as a blanched area after fifteen or twenty seconds, when the skin is stroked lightly with a blunt instrument. This phenomenon has been known for more than half a century, and has been regarded clinically in certain circumstances as indicative of "vasomotor instability." Carrier asserts, in the light of his experimental findings, that if the cause of such reactions has not been placed with absolute certainty outside the action of the sympathetic nervous system, it is at least made very probable that they are due to direct mechanical stimulation of the vessel walls. Such information about dermatographism is highly important, because there has been a tendency of late to use it diagnostically in several fields of clinical and physiologic study.

5. Carrier E. B.: Studies on the Physiology of Capillaries, V, The Reaction of the Human Capillaries to Drugs and Other Stimuli, Am. J. Physiol. **61**: 528 (Aug.) 1922.

ANTIVIVISECTION PROPAGANDA BY CAMOUFLAGE

In Colorado and California the antivivisectionists have initiated bills to abolish animal experimentation. At the November elections in these states the proposal will be decided by popular vote. Dr. W. R. Hadwen has again come from England to denounce in these Western states and elsewhere the use of the experimental method in solving medical problems. As possessor of an M.D. degree, and as a facile speaker, he may lead thoughtless people into believing that the medical profession seriously questions the value of the method. Dr. Hadwen is characterized by antivivisectionists as "a distinguished physician and surgeon of England, whose attainments are of the highest order." Who is Dr. Hadwen, and upon what basis does he presume to speak for the medical profession?

Dr. Hadwen was born in 1854, and he obtained his M.D. degree from St. Andrews in 1897, when he was 43 years of age. He also writes "J.P." after his name —Justice of the Peace. No evidence is forthcoming to indicate in any way that Dr. Hadwen is a "distinguished" physician or surgeon, except as he may be said to be "distinguished" from the rest of the medical profession by the manner in which he allows his medical degrees to be exploited in the interests of an unscientific propaganda, thus lending to his bizarre utterances a weight which they would not otherwise have. Like most faddists, he does not confine his efforts to the advocacy of a single fad: he not only is an ardent antivivisectionist, an antivaccinationist and a vegetarian, but also has been the proponent of movements connected with temperance, premature burial, and almost every agitation against modern science and modern medicine. His knowledge may be judged from the following quotations:

"I deny the whole germ theory of disease."

"There is no such thing as a typhoid or diphtheria germ."

"There is not an atom of truth" in the view that germs carry disease.

"I know nothing whatever that has been gained from experimentation on living animals that has been of the slightest benefit in the amelioration or cure of any human disease."

"I am out for the abolition of vivisection entirely, root and branch."

"The boasted work of Pasteur and Lister is all nonsense."

"I have no hesitation in calling him (Pasteur) the greatest charlatan of the last century."

We repeat: Such views as these are sufficient to "distinguish" any man—certainly in holding such views he practically stands alone among doctors of medicine.

When he was in the United States last year, Dr. Hadwen asserted that the British government was paying £4,000,000 a year to former British soldiers suffering from heart disease, and said, "I have no hesitation in giving my own firm opinion publicly tonight that nine tenths of those cases were the direct result of the blood poison by antityphoid inoculation." This astounding charge was brought to the attention of Sir Thomas Goodwin, director-general of the British Army Medical Service, by Major-General M. W. Ireland, Surgeon-General of the United States Army.[1] In reply, General Goodwin stated officially that the causes of cardiac disease in the pensioners had been carefully determined by highly qualified experts, and that they did not lend the smallest support to Dr. Hadwen's conjectures. Instead, in comparison with previous experience without antityphoid inoculation, the procedure saved many thousands of lives—a conclusion supported by the statistics of the American army.

1. The correspondence appeared in THE JOURNAL, Jan. 21, 1922, p. 233.

The ignorance of the basic facts of medicine revealed by this opinionated gentleman may be appraised from the utterances quoted. It is unfortunate that a man so essentially uninformed on medical science is in a position to exploit his medical status so as to endanger the lives of his fellow men, and even of the dumb creatures which he claims to befriend. The members of the medical profession should make sure that Dr. Hadwen's true position in the medical ranks is generally understood by the public which he has tried to influence, and that his "opinions" are opposed by well-founded facts.

We assert that W. R. Hadwen is *not* "a distinguished physician and surgeon"; on the contrary, he stands discredited both in his own country and abroad by those whose scientific opinions and attainments are worth anything.

DANGERS OF ALKALOSIS

Alkali therapy, particularly as it is exemplified in the widespread use of sodium bicarbonate under all manner of circumstances, has such a long tradition and so much popular approval that its possible shortcomings are rarely given consideration. In the management of diabetes, for example, the administration of sodium bicarbonate, particularly when a detectable ketosis is present and acid products of incomplete intermediary metabolism must be eliminated, has come to be looked on by many as essential to the safety of the patient and conducive to his well-being. Some of the leaders in this clinical field, however, have warned against the indiscriminate use of the alkali in combating so-called acidosis; in fact, it has even been questioned whether the procedure is ever really necessary, if the regulation of diet is so enforced as to reduce the production of acid factors of the sort referred to. In recent years it has become more apparent that "alkalosis" may have dangers for the organism quite as serious as those of the better recognized acidosis. Any situation in which the acid-base equilibrium of the organism is seriously impaired may be regarded as a physiologic menace.

Illustrations of this have lately been recorded by Grant [1] at the Peter Bent Brigham Hospital, Boston. Overdosage with sodium bicarbonate in cases of acidosis resulted in the appearance of unmistakable symptoms of tetany, a symptom already described for animals under conditions in which alkali is added to the blood faster than it is being excreted, so that the normal ratio of sodium bicarbonate to carbonic acid ($NaHCO_3 : H_2CO_3$) is upset. Tetany is seen in man in other conditions in which this disturbance of equilibrium may occur; for example, in hyperpnea leading to an overventilation whereby the carbon dioxid is removed in undue proportions from the blood, and in gastric obstruction whereby acid secreted into the stomach remains there so that it cannot pass into the intestine to stimulate the flow of corresponding alkaline secretions into the bowel. Consequently, an excess of sodium bicarbonate is left in the blood.

A type of tetany associated with a lowered content of calcium in the blood has received much attention of late.[2] Alkalosis is not a constant characteristic of this condition, which is occasionally found in infants and in experimental parathyroidectomy. Whether the various types of tetany now recognized can ultimately be explained on some common etiologic basis, such as a deficiency of calcium in the tissues themselves, or failure to excrete certain toxic substances, as claimed by Luckhardt, remains to be seen. The warning that alkalosis through institution of inadvisable therapeutic procedure should be avoided is timely, in any event.

1. Grant, S. B.: Tetany: A Report of Cases with Acid-Base Disturbance, Arch. Int. Med. **30**: 355 (Sept.) 1922.

Current Comment

CONGENITAL HEMOLYTIC JAUNDICE

Hemolytic jaundice, a disease first recognized by Hayem in 1898 and by Minkowski in 1900, occurs in an acquired and a congenital or familial form, the latter being more frequent and also better understood. The disease often appears in members of different generations of a family, and it is apparently transmitted in equal degree by father or mother; but sometimes it is observed without any record of previous occurrence in the patient's ancestry. As in the case of other hereditable diseases, the cause is obscure, and the usual efforts to ascribe this, as other little understood conditions, to congenital syphilis and to tuberculosis have not been successful. As pointed out by Tileston,[3] the jaundice in this disease, as a rule not pronounced, is present at birth or appears in childhood or youth and persists through life. The general health may not be affected seriously, the patient being "jaundiced rather than sick"; many of the patients live to an advanced age, and some regard the jaundice as a family peculiarity. Generally speaking, the jaundice is acholuric and nonobstructive—bile pigment is present in the stools but absent from the urine—the spleen is enlarged with more or less anemia ("congenital icterus with enlarged spleen"), and, as shown by Chauffard, the resistance of the red corpuscles, many of which are reticulated, to hypotonic salt solution is lower than normal. In hemolytic jaundice, laking may begin in from 0.7 to 0.6 per cent. salt solution and be complete at 0.4 or even at 0.45 per cent., while normally laking begins at from 0.44 to 0.48 per cent., and becomes complete at 0.3 per cent.[4] A characteristic feature is the "crises" that occur more often in the earlier periods of life, in which there is fever, vomiting of bile, and pain in the splenic and hepatic regions, the general jaundice

2. Howland and Marriott: Quart. J. Med. **2**: 289, 1918. Kramer, B.; Tisdall, F. F., and Howland, J.: Observations on Infantile Tetany, Am. Jour. Dis. Child. **22**: 431 (Nov.) 1921. Hastings, A. B., and Murray, H. A., Jr.: J. Biol. Chem. **46**: 233 (March) 1921.

3. Tileston, Wilder: Hemolytic Jaundice, Medicine **1**: 355-388, 1922.

4. Directions are given by Pearce, Krumbhaar and Frazier: Spleen and Anaemia, Philadelphia, J. B. Lippincott Company, 1918. Kolmer, J. A.: Infection, Immunity and Specific Therapy, Philadelphia, W. B. Saunders Company, 1915, p. 847.

deepening and the number of red corpuscles falling rapidly (Widal's "deglobulization") so that a rather severe temporary anemia may develop. The hemolytic nature of the jaundice, that is, the derivation of the pigments directly from hemoglobin, is regarded as settled, the abnormal fragility of the red corpuscles in all likelihood being a primary factor in its production. Whatever the nature of this fragility, it is easily conceivable that in consequence of it the red corpuscles are destroyed more readily. There is increased phagocytosis of corpuscles and pigmentation on the part of the endothelial cells of the spleen, liver, marrow and lymph nodes, and the spleen becomes enlarged, partly, at least, from the effects of the excessive destruction (so-called spodogenous enlargement). Whatever the explanation of the mechanism of increased destruction of corpuscles in congenital hemolytic jaundice, and of the accentuation of the process at times of crises, the spleen must play an important, active part because splenectomy may be followed by marked improvement, and even virtual cure. In such cases the jaundice fades away, and the red corpuscles become normal in number as well as appearance. Their abnormal fragility on testing with hypotonic salt solutions may persist, however, and the possibility cannot be denied that pathologic hemolysis may become reestablished. The value of splenectomy in hemolytic jaundice was shown strikingly in Elliott and Kanavel's [5] compilation of forty-eight cases—sixteen acquired, twenty-three familial, nine ungrouped—in which splenectomy had been made: In all except two in which death took place soon after the operation, a "cure" was reported. Various forms of medical treatment and the roentgen ray so far have been without any effect. Tileston advises that in all cases of chronic or recurring nonobstructive jaundice in patients under 30 years of age, the possibility of congenital hemolytic jaundice be given careful consideration. In fact, in all cases of chronic nonobstructive jaundice the resistance of the red corpuscles to hypotonic salt solution should be tested, and searching inquiries made as to the occurrence of jaundice in the family, and of "crises" and anemia in the earlier history of the patient.

5. Elliott C. A., and Kanavel, A. B.: Splenectomy for Haemolytic Icterus, Surg., Gynec. & Obst. 21:21, 1915.

RADIOACTIVITY OF WATERS

Twenty-five years ago, various mineral springs and waters were advertised with a host of therapeutic virtues accredited to "lithia." Time and the analytic chemists have educated laymen—and physicians too—as to the absurdity of the lithia theory. To obtain a dose of lithium in the average natural lithia-containing waters, the patient must drink a quantity of water equal to that in some of our summer resort lakes—and after this Gargantuan feat the pharmacologist would inform him that lithium is of no value anyway. Is radioactivity now to complete the same cycle? So popular is the magic word "radio" that no advertisement is complete without it. Waters, be they from domestic mineral springs or from the spas abroad, are proclaimed as containing the "therapeutic catholicon" of the ages. But again experience and the chemists are to be reckoned with. Experience has shown that radium and its emanations are not endowed with all of the wonderful virtues professed, and the rationale of its internal administration is being doubted. Furthermore, relative traces of radioactive substances are practically valueless; the Council on Pharmacy and Chemistry will not accept, for inclusion in New and Nonofficial Remedies, any radium solution for internal use the dosage of which is less than 2 micrograms each day, or any radium emanation generator which yields less than 2 microcuries of emanation each twenty-four hours. For the last ten years, chemists in the Department of Agriculture have been examining both natural domestic waters and bottled foreign waters; a report of the amount of radium or radium emanation found in such waters has just been published.[1] The determinations show that it would be necessary to consume 2,810 gallons daily of the water yielding the largest quantity of temporary radioactivity in order to obtain the minimal therapeutic dose of 2 microcuries emanation. On the other hand, if the permanent variety of radioactivity is desired, the best water available would necessitate its administration in the amount of 1,957 gallons a day in order to obtain 2 micrograms of radium! What will be the mineral water fad twenty-five years hence?

1. Skinner, W. W., and Sale, J. W.: Radioactivity of Miscellaneous Waters Examined in the Bureau of Chemistry, J. Indust. & Engin. Chem. 14:949 (Oct.) 1922.

A BRITISH ESTIMATE OF CHIROPRACTIC AND OSTEOPATHY

We all have burdens to bear. In Great Britain, as the *British Medical Journal* points out, the medical profession had to contend with the "medical clubs," but "the campaign against cheap medical schools and inferior medical qualifications . . . has been unnecessary in the British Empire." Parenthetically, our British colleague credits the American Medical Association for the complete victory which now, it hopes, has been gained over these American evils. With an eye to the future, the British journal now considers the medical cults which seem to be firmly established in America. It appears that a host of publicity agents and advertising experts has descended on London in a sporadic raid for the establishment of osteopathy. The *British Medical Journal* publishes an analysis of the report of the Massachusetts Medical Society on the principles underlying these manipulative cults. It is unnecessary here to repeat the fallacies pointed out or to show the absolute lack of any scientific evidence for the systems of therapy built on misconceptions. Here, however, is the estimate of our British confrères on these massotherapists and spinal manipulators:

> It may appear to observers at a great distance that osteopathy and chiropractic are little more than terminological adaptions of bone-setting, with the site of operation cleverly transferred from the knee or the ankle, where results (if any) can at least be seen, to the backbone, where they cannot.

Anthrax in Pennsylvania.—In connection with a survey of the entire tanning industry of Pennsylvania, 123 cases of anthrax traceable to the handling of cattle hides or goat skins were tabulated from 1910 to 1921.—H. F. Smyth, *Am. J. Hyg.*, July, 1922.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Annual Clinical Meeting.—The second annual clinic of the Dallas County Medical Society was held at Selma, September 26-27, under the presidency of Dr. William W. Burns. A banquet was given, September 27, at which Dr. Oscar Dowling, state health officer of Louisiana, and Dr. Winfield K. Sharp, Jr., U. S. Public Health Service, Washington, D. C., gave addresses.

CALIFORNIA

Southern California Medical Society.—The fall meeting of the society will be held November 3-4 in Los Angeles. Dr. Louis B. Wilson, dean of the University of Minnesota Graduate School of Medicine, and Dr. Edward C. Rosenow of the Mayo Foundation, Rochester, Minn., will be among the speakers.

Luncheon Given for Dr. Stadtmuller.—A luncheon was given in honor of Dr. Eleanor Stadtmuller of San Francisco, September 6, at the San Diego Hotel, by the Medical Women's Club. Dr. Stadtmuller is chairman of the child hygiene department of the state board of health, and is making a survey of the state and planning her next year's work.

Hospital News.—A new hospital will be erected immediately at a cost of $500,000, at Bakersfield, for Kern County. This institution will replace the old structure in Bakersfield, which has been pronounced inadequate for the present need. Dr. Joe Smith will be superintendent of the institution.——The U. S. Public Health Service has contracted with the Alpine Sanatorium at Alpine to take care of government patients, Dr. Hyman Lischner, president of the sanatorium, announced, September 23.

CONNECTICUT

Large Sum for Hospital.—Under the will of Mrs. Winchester, widow of William W. Winchester, founder of the Winchester Repeating Arms Company, more than $4,000,000 has been bequeathed to the General Hospital Society of Connecticut (New Haven Hospital), New Haven. Mrs. Winchester died in California.

DISTRICT OF COLUMBIA

Drive on Hypnotic Drugs.—Following the death of Thomas Gibbs in Georgetown Hospital, Washington, from barbital (veronal) poisoning, Dr. William C. Fowler, district health officer, declared that the sale of barbital and other hypnotic drugs of the same class come under the present act regulating the sale of poisons in Washington. Section 13 of the act reads that it "shall be unlawful for any person to sell or deliver to any other persons the compounds, combination, or preparation to wit: compounds of salts of antimony, arsenic, barium, chromium, copper, gold, lead, mercury, silver or other poisons derived from poisonous alkaloids or their salts, or any other virulent poison." Dr. Fowler holds that barbital and other drugs of the sort come under "virulent poisons," and therefore should only be sold by pharmacists under the rules affecting poisons.

GEORGIA

Personal.—Dr. Marvin F. Haygood, Atlanta, who for many years has been director of county health work for the state board of health, has been selected as a beneficiary under their scholarship system by the International Health Board. Dr. Haygood has been assigned to Johns Hopkins University, Baltimore.

ILLINOIS

Full-Time Health Department Installed.—The municipality of Berwyn has installed a health officer and two nurses on a full-time basis. Funds for this purpose were made available through the creation of a public health district, which, under the laws of Illinois, provides for the levy of a tax that can be expended for nothing but public health work. Berwyn, it is stated, is the second municipality in the state to create a public health district by popular vote.

Special Diphtheria Bulletin.—The state department of public health announces that a special bulletin on the prevention and control of diphtheria has just come from the press. Space has been given to a discussion of the practical use of toxin-antitoxin and of the Schick test. The technic of administering antitoxin and problem of the diphtheria carrier are also covered at some length. Copies of the bulletin are free to the medical profession and public health workers in Illinois, and will be forwarded promptly on receipt of requests addressed to Dr. Isaac D. Rawlings, director of public health, Springfield.

Diphtheria Takes Upward Climb.—A rather sudden and sharp increase in diphtheria incidence is reported by the state department of public health. During the first week in October, when 335 cases were reported, the increase amounted to nearly 100 per cent. over the last week in September, when 189 cases were reported. The latter was slightly higher than the average for the preceding four weeks. While cases have been reported from every quarter of the state, still the most threatening foci are found in four southern counties, Madison, Saline, Jasper and St. Clair. Up to October 1, there had been reported during the year more than 1,000 cases less than for the corresponding period in 1921.

Personal.—Dr. Paul A. Slater, Hindsboro, has been appointed district health superintendent, under the state department of health, of the Seventeenth Senatorial District, which includes the counties of Coles, Clark, Douglas and Edgar. He will assume his duties at once.——Dr. James L. Miller has resigned as city physician of North Chicago.——Dr. Samuel E. Parr, Ottawa, has been reappointed county physician of La Salle County.——Dr. John W. H. Pollard, health officer of Quincy, has been named by Dr. Rawlings of the state health board as member of the committee on public health and child welfare, which will meet in St. Louis in November, and of the committee on pasteurization, which will meet in Illinois shortly.

Sanitary Surveys of Upper Fox River Region.—Sanitary engineers of the state department of public health recently made detailed sanitary surveys of the upper Fox River and connecting lakes. Along the water front of this whole region, an ever-increasing number of summer homes are being built and, as a result, there are numerous private sewers discharging into the lakes and river, making the water dangerous for bathing purposes. As a result of the investigations, steps have already been taken whereby the sources of pollution will be eliminated; while property owners will be instructed and advised as to how properly to dispose of sewage without dangerously polluting either the bathing beaches or domestic water supplies. Some half dozen cases of typhoid fever that recently developed among bathers in this region were the immediate cause of the sanitary investigations and the protective measures that have been adopted.

Health News.—The "health chores" inaugurated last year in the River Forest schools by the Chicago Tuberculosis Institute produced such successful results that they will be continued this year. Illustrated verse cards are given the children to remind them of their "chores" which are as follows:

I washed my hands and drank a glass of water before each meal, and tried to eat slowly.
I washed my face, my ears and neck and cleaned my fingernails.
I kept my fingers, pencils and everything likely to be unclean or injurious out of my mouth and nose.
I brushed my teeth thoroughly after breakfast and after the evening meal.
I took ten or more slow, deep breaths of fresh air. I protected others if I spit, coughed or sneezed.
I played out doors or with open windows more than thirty minutes.
I was in bed ten hours or more last night and kept my windows open.
I drank no tea or coffee, and tried to eat nourishing foods, including milk, cereal, vegetables and fruits.
I tried to sit and stand straight and also to keep neat.
I tried to be cheerful and cleanminded, and to be helpful to others.
I took a full bath on each of the days of the week that are checked X.

Chicago

Central Society of Physical Therapeutics.—Dr. Valemar Sillo, New York, and Dr. Francis J. Stirn, Dubuque, Iowa, were elected president and secretary, respectively, of the society at the recent annual meeting in Chicago.

Medical Building to Be Revised.—The plans of the Medical Research Building for the University of Illinois in Chicago must be revised in order to keep within the state appropriation of $500,000, it is announced. The architect states that revisions will shortly be made and new bids asked.

Hahnemann Hospital Changes.—The following changes have been inaugurated at Hahnemann Hospital: 1. An absolutely nonsectarian policy as to teaching and practice; the

president states that the hospital has no affiliation with any medical college at the present time, and will have none except with a Class A college. 2. Complete reorganization of the staff. 3. Weekly clinicopathologic conferences and monthly staff meetings at which the quality of service rendered patients is closely analyzed. 4. Plans, now completed, for an outpatient department, which will supplement the routine work of the hospital. The newly appointed consulting staff includes: Drs. A. J. Ochsner, surgery; Ludvig Hektoen, pathology; E. E. Irons, internal medicine; Cassius D. Wescott, eye; Edgar J. George, eye; Lewis J. Pollock, neurology; N. Sproat Heaney, gynecology; David S. Hillis, obstetrics, and O. T. Schultz, director of laboratories.

INDIANA

Personal.—Dr. Fletcher Hodges, Indianapolis, who was injured in an automobile accident in January, has recently returned from a tour of Central Europe and the British Isles. ——Drs. Joseph L. Conley, Martha J. Smith, William Wise, Joseph Ward, Floyd R. Carter and Euclid T. Gaddy have been appointed full-time medical inspectors of the city schools of Indianapolis by the city board of health.——Dr. C. L. Bartlett, who has had charge of the laboratories of St. Joseph's Hospital, South Bend, has resigned to go to China for the Rockefeller Institute.

Department of Hygiene Established.—Four, or possibly six, child hygiene clinics, with a physician in charge, will be opened in various parts of Indianapolis as soon as possible, it is announced by Dr. Herman G. Morgan, secretary of the city health department. Paul L. Kirby, formerly general secretary of the Children's Aid Association, will be director of the new division. Instruction and medical attention will be given free to expectant mothers. Dental hygiene work and home visits to parents will also be conducted under the new division. If necessary, the city will pay for such home improvements as screening windows, if a baby's life is at stake, Dr. Morgan states. It is estimated that the cost of maintaining the division will be from $12,000 to $14,000, yearly.

KENTUCKY

Personal.—Dr. Everette C. Wilhite has resigned as director of the Harlan County health unit and will reside in Covington.——Dr. George W. Brown has been reappointed on the board of health of Newport.

Hospital News.—The Henderson Tuberculosis Hospital, Henderson, a municipal institution, has been closed.——Dr. James P. Riffe, Covington, has been appointed to a committee to develop plans for a Kenton County tuberculosis sanatorium for which $30,000 has already been raised.

LOUISIANA

Personal.—Dr. Fayette C. Ewing, Alexandria, president of the Rapides Parish Medical Society and chief of the eye, ear, nose and throat service of the U. S. Veterans' Hospital No. 27, Camp Beauregard, has been appointed abstract editor for the proceedings of the ophthalmologic and otolaryngologic sections of the Royal Society of Medicine of Great Britain. It is stated that Dr. Ewing is the only living American who has held an original fellowship in this society and had access to the proceedings.

MAINE

Prohibition and Narcotic Law Violators Fined.—Fifteen alleged violators of the Eighteenth Amendment and the Harrison Narcotic Law were fined a total of $11,850 by Judge Peters in the U. S. district court at Portland, September 26. "Dr." James C. Baker, Portland, alias James C. Wilson, was sentenced to serve three months in the county jail for having narcotics in his possession.

MARYLAND

Physician Fined.—It is reported that Dr. Henry G. Branham, Baltimore, was fined $100 recently for unlawfully issuing a prescription for intoxicants without keeping an official record for federal authorities.

Personal.—Drs. Charles S. Levy, Moses M. Savage and Harry R. Lickle have been appointed health officers in the Baltimore City Health Department, to succeed Drs. Jacob Fisher, Amos R. Koontz and George H. Grove, all of whom have resigned.—Dr. Robert Picqué, professor of the faculty of medicine and hospital surgeon, Bordeaux, France, who will attend a conference of surgeons in Washington, D. C., next week, was recently in Baltimore, where he inspected the surgical clinic of the Johns Hopkins Hospital.

Military Training for Medical Students.—A new course of instruction has been added to the Johns Hopkins Medical School—the Medical Reserve Officers' Training Corps. This unit will compare with the same line of training offered at the university at Homewood. Officers at the Johns Hopkins University have classed the new undertaking as essential to the general scheme for building adequate national defense. Major Charles Riley is in charge of the work. He was formerly on the staff of the Walter Reed Hospital, Washington.

Clinics for Venereal Diseases to Be Established.—The state department of health has developed plans for the opening of a chain of clinics and stations throughout Maryland to combat venereal diseases. Six new clinics are to be established, in Rockville, Easton, Frederick, Westminster and Elkton. Ultimately, it is planned to have a clinic in every city in Maryland. The department of health will furnish equipment and medical supplies for the clinics. A county health officer or a physician designated by the department will give his services. Some of the clinics are to be established in hospitals, wherever this is possible, and others will be held in physicians' offices.

MASSACHUSETTS

Refuses to Indict Physician.—The Essex County grand jury returned a no bill in the case of Dr. Joseph A. Levek, Lawrence school physician, charged with performing an illegal operation.

Boston University Opens.—Dean John P. Sutherland presided at the special exercises in honor of the fiftieth anniversary of the founding of Boston University School of Medicine, recently. Dr. Samuel H. Calderwood, chairman of the board of registration in medicine of Massachusetts, and Dr. Edward B. Hooker, Hartford, Conn., gave addresses at the ceremoay.

American Physiotherapy Association.—The first annual convention of the American Physiotherapy Association was held in Boston, recently. Dr. Elliot G. Brackett and Dr. Joel E. Goldthwaite, both of whom were active in the organization of the division of reconstruction of the M. C., U. S. Army, during the World War, and Dr. Frank B. Granger were among the speakers.

Mental Health of Children.—Dr. William Healy, director of the Judge Baker Foundation, gave a lecture on juvenile delinquency and mental training, September 24, at the Boston University School of Education. This was the first lecture of a series of fifteen to be given on the mental health of children. Teachers and parents from Massachusetts, New York and Rhode Island have registered for this course of lectures, one of which will be given every Monday night until Jan. 15, 1923.—— Prof. J. Mace Andress, head of the department of psychology and child study of Boston normal school, delivered the first lecture of a series, September 26, at the Jacob Sleeper Hall, Boston, on the subject of "Mental Hygiene—Its Significance for Education." Professor Andress was recently sent by the government on a tour of twenty-five states, to lecture on public health methods.

MICHIGAN

County Medical Meeting.—At the annual meeting of the Clinton County Medical Society, held at St. Johns, September 27, under the presidency of Dr. W. A. Scott, Dr. Guy H. Frace was elected president, and Dr. Jerome W. Ankley, secretary-treasurer.

Personal.—Dr. Homer T. Clay has been appointed school physician at Grand Rapids.——Dr. Mabel Elliott, Benton Harbor, has arrived in Rodosto, Thrace, to help care for the 40,000 refugees from Smyrna. Dr. Elliott was formerly stationed at Erivan, Armenia.

Commercialization of Sex Education Films Banned.—Dr. Richard M. Olin, commissioner of the state department of health, has issued a statement condemning the showing of the picture "Some Wild Oats" in theaters in several Michigan cities. He states that the film is being shown for the money that is in it and that there is no attempt on the part of theater managers to better health conditions or discourage sex crimes.

Hospital News.—The Oceana County Hospital Association, Hart, has purchased a site for a new hospital building and nurses' home.——The contract has been let for converting a farm building at Valley Farm, Henry Ford's place at Dearborn, into a nursery building. Provisions are planned for

the accommodation of twenty-four babies, including isolation rooms, bath rooms and kitchen.——An addition is under construction at the hospital owned by Dr. R. E. Loucks in Detroit.——Dr. Bryce Miller has purchased property at First and McCook streets, Monroe, on which a hospital building will be erected.

MISSOURI

Missouri Valley Medical Association.—At the thirty-fifth annual convention of the association, held at St. Joseph, the following officers were elected: president, Dr. Floyd H. Spencer, St. Joseph; vice presidents, Drs. Willis F. Stotler, Shenandoah, Iowa, and Palmer Finley, Omaha; treasurer, Dr. Oliver C. Gebbart, St. Joseph, and secretary, Dr. Charles Wood Fassett, Kansas City. Both secretary and treasurer were reelected. The next annual meeting will be held in Omaha.

MONTANA

Dr. Scanland Resigns.—Dr. John Milton Scanland has resigned as superintendent of the Montana State Hospital for the Insane, Warm Springs, his resignation to take effect, October 31. Dr. Scanland has been connected with the institution for about twenty-five years, and has served as superintendent for the last fifteen years, when he succeeded the late Dr. O. Y. Warren.

NEBRASKA

Children's Health Conference.—The week of October 2-7 was children's health week in Omaha. Its observance was under the auspices of the Nebraska Bureau of Health, and the department of public welfare, Lincoln. Lectures were given and moving pictures shown demonstrating attention to the welfare of children, prenatal care and general hygiene, and physical examinations were made daily. Nurses were provided for the children while the mothers attended the lectures or motion pictures. All services were free.

NEW JERSEY

New Hospital Superintendent.—Dr. Frederick A. Pringle, Cedar Grove, has been appointed superintendent of the Essex County Hospital for Contagious Diseases, Belleville.

Famous Educator Dead.—Maximilian P. E. Croszmann, Ph.D., founder of the National Association for the Study and Education of Exceptional Children, member of the American Academy of Medicine, and author of many notable works on the education of children, dropped dead near his home in Plainfield, October 2. He was 67 years of age.

Health Officer to Regulate Coal Deliveries.—The ordinance for the distribution of coal in Jersey City empowers Health Officer John Hagan to regulate priority in the matter of coal deliveries. The health officer is empowered to require from a customer a verified statement as to his requirements up to April 1, 1923, and the size and tonnage of coal now in possession of the customer; also that no order is now on file with any other source of supply. Every coal dealer shall recognize the priority list of the health officer, who shall so direct distribution that the homes of the sick, the aged and infirm shall be supplied fuel and the hospitals, schools, orphanages and public institutions be supplied in order of their necessity. Any offense or violation of this ordinance shall be punishable by a fine of $100.

NEW YORK

Hospital News.—Although opened to receive patients some time ago, the new Cumberland Street Hospital, Brooklyn, formally celebrated its opening, October 1. The following day, the institution was opened to the public. On October 3, the celebration closed with a dinner in honor of Commissioner of Public Welfare Bird S. Coler.

Appropriation Asked for Maternity Work.—Dr. Copeland, health commissioner of New York, has asked the board of estimate for $6,412,173 for health work and prenatal care. This is an increase of $927,608 over last year's appropriation. Dr. Copeland estimates that, if thirty-nine additional nurses are granted, the department will be able to effect a 15 per cent. reduction in the infant death rate within the year.

Foundation Day Exercises of Medical Society.—The medical Society of the County of Kings will hold exercises, October 7, at the MacNaughton Auditorium Library Building, Brooklyn, to commemorate the founding of the society. Dr. Frank D. Jennings will preside. There will be a musical program. Dr. Lewis P. Addons, secretary, will read minutes of the first meetings of the society, and addresses will be given by Dr. Royal S. Copeland and Dr. Luke D. Stapleton, LL.D.

Smallpox Among Indians.—A recent outbreak of smallpox on the St. Regis Reservation in Franklin County resulted in twenty-nine cases of the disease and has caused the state department of health to take energetic measures to prevent a further invasion of northern New York. Altogether, 146 cases of smallpox have been reported in New York State, outside of New York City, since January 1. With repeated local outbreaks and constant danger of infection being brought across the border lines from Canada, State Health Commissioner Biggs considers the situation sufficiently serious to urge again upon the public the importance of vaccination. The department of health is preparing special posters to be put up in railroad stations and public places throughout the state.

Personal.—Dr. Sue Radcliff, Yonkers, arrived on the *Lapland*, September 23. Dr. Radcliff was one of the delegates to the convention of the International Medical Women's Association in Geneva.—— Dr. Eliza Mosher of Brooklyn arrived on the *Mauretania*, September 23, from Europe, where she attended the International Women's Medical Association Congress in Switzerland. Dr. Mosher described a plan which is being carried out near Paris by the American Women's Hospitals Committee. A large playground and a row of houses have been secured, which are being rebuilt for a settlement where children may gather for recreation. The first floor will contain a tuberculosis dispensary and the second floor a dental clinic, and the third floor will be made into a children's museum, patterned after the one in Brooklyn. ——Dr. Royal S. Copeland, health commissioner of New York, has been nominated for the United States Senate.

Buffalo's Infant Death Rate Falls.—At the request of Health Commissioner Fronozak, the division of vital statistics of the state department of health has made a special preliminary report on the infant mortality of Buffalo. According to this report, the death rate from preventable causes in children under 1 year of age has declined in Buffalo from 140 deaths per thousand births in 1900 to 62 in 1919. During the same period, the death rate from diseases classed as nonpreventable has remained practically stationary. The infant mortality of Buffalo corresponds closely to that of New York, and the two cities show about the same average annual ratio of decrease since 1900. At present, more than 56 per cent. of the infant mortality of New Zealand, which has a much lower infant mortality than either New York or Buffalo, is nonpreventable, and in Buffalo about 44 per cent. is nonpreventable. The infant mortality from preventable and nonpreventable causes declined in New York from 203 in 1900 to 76 in 1921. During the same period, the rate in Buffalo declined from 187 to 93.

New York City

Charity Conference Meets.—The thirteenth New York City Conference of Charities and Corrections, postponed from the spring, was held, September 26-28. Among the subjects discussed were industrial problems, delinquency and problems affecting the child and the family.

School for Social Research.—The courses offered at the New School for Social Research, New York, include, "The Significance of Modern Philosophy," by Prof. John Dewey, Ph.D., Columbia University; "Behavior Psychology," by John B. Watson; "Psychology and Conduct," by Prof. Arthur R. Moore, and "Biology and Its Social Implications," by Prof. Otto Glaser, Ph.D., of Amherst College.

Gifts to Columbia University.—At a meeting of the board of trustees of Columbia University, October 6, a list of gifts was announced. Those of interest in connection with the medical school are: a gift of $135 for the general support of the medical school; from the Commonwealth Fund for the study of rickets in the pathologic department, $4,000; from an anonymous donor, for the surgical research fund, $3,000; to be added to salaries in the surgical research laboratory, $500 from the Biochemical Association for Clerical Assistance in the department of biologic chemistry, $180.

Fifth Avenue Hospital Open.—The Fifth Avenue Hospital, erected at a cost of $3,500,000, was formally opened, September 27. There are 340 rooms, all private, and every room an outside one. The new institution is an outgrowth of the combination of the Hahnemann Hospital and the Laura Franklin Free Hospital for Children. It is hoped to obtain an endowment fund of $5,000,000; of this sum, $3,000,000 has already been subscribed. The aim of the hospital is to provide the highest type of service irrespective of race or creed.

Safety Week.—The week beginning October 7 was devoted to efforts to lower the accident death rate in New York. By proclamation, Mayor Hylan gave free rein to the public safety committee of 100 appointed by the Safety Institute of America. Two thousand four-minute men and 1,000 four-minute women made addresses in schools, churches, clubs and public places to emphasize that the city's death toll by accident is 3,483 persons a year—1,054 of them children. More than 6,000 industrial plants are cooperating. Posters, bulletins and programs repeated the admonition "This is Safety Week. Don't get hurt today."

Appropriation to Fight Diphtheria.—The city department of health has received an appropriation of $25,000 from the board of estimate with which to establish a bureau to fight diphtheria. The work of the new bureau will be to prevent diphtheria by Schick testing and toxin-antitoxin inoculation. This procedure has within the last two years reduced the death rate of children under 5 years of age. It is claimed that last year it saved 300 lives and that there were 2,000 fewer cases of diphtheria than during the preceding year. Appointments to be made to the bureau will include five physicians at salaries of $1,340 a year, five nurses at $1,405 and two bacteriologists at $1,495.

The Wesley M. Carpenter Lecture.—The New York Academy of Medicine held its first meeting of the season on the evening of October 5, when Prof. Rafaelle Bastianelli of Rome, Italy, delivered the Wesley M. Carpenter lecture. His lecture was entitled "On the Diagnostic and Therapeutic Importance of Some Typical Tender Bone Points," under which he described what he believes to be a disease entity hitherto unrecognized as such, and diagnosed variously as neurasthenia, neuroses and the various "algias," and even as different visceral diseases. Professor Bastianelli also described the treatment which had proved effective and afforded convincing evidence that the condition he described was actually a distinct entity.

Personal.—Dr. Charles A. Wilson-Prevost, after twenty-five years of practice in New York, sailed on the *Paris*, October 4, for France, where he will be permanently located at 28 Avenue d'Iena, Paris.——Dr. M. S. Gregory, alienist at Bellevue Hospital, returned to New York, September 19, on the *Berengaria*, after a study of the progress made in Europe since the war in treating mental and nervous conditions.——Dr. Esther Lovejoy, New York, president of the International Women's Medical Association at the recent conference in Geneva, has gone to Smyrna to assist in directing the medical relief work for the refugees from Smyrna, Mytilene and Chios. Dr. Lovejoy has already given $10,000 for relief work in Greece and promises more if the situation demands it.——A delegation of several hundred residents of the Bronx went down the Bay, September 27, to welcome Drs. Edward L. Corbett and John Riegelmann, who were returning from Europe on the *Homeric*.——Dr. Arthur I. Blau, New York, diagnostician to the department of health, has left for Vienna and Berlin for graduate work in pediatrics. On his return in the summer of 1923 he will limit his practice to that specialty.——Dr. Edward W. Lee, New York, has been appointed consulting surgeon of the Erie Railroad, with headquarters at Randolph, N. Y. He has retired from active practice, and in the future will devote himself to consulting practice only.

OHIO

District Medical Meeting.—At the annual meeting of the Second Councilor District Medical Society held at Dayton, Dr. John C. Ryder, Eaton, was elected president; Dr. Herbert C. Haning, Dayton, treasurer, and Dr. Daniel B. Conklin, Dayton, secretary.

Medical Society Adopts Resolution on Vaccination Law.—At a meeting of the Campbell and Kenton County Medical Society in Alexandria, September 21, a resolution was adopted giving its hearty support to the health officers and school physicians in the enforcement of the vaccination law.

Women Hold Hygiene Conference.—A meeting of representatives of women's organizations interested in social hygiene was held in Columbus, October 2. A program for a campaign for the advancement of social hygiene work was adopted. Organizations representing a membership of more than 500,000 women pledged their support.

OKLAHOMA

Successor to Jules Schevitz.—R. H. Hixson has recently been appointed secretary of the Oklahoma Public Health Association to succeed the late Jules Schevitz. Mr. Hixson comes from the Florida Public Health Association, of which he was general secretary.

Hospital News.—The Drumright Hospital Association, of which Dr. Paul Sanger is president, will establish a new hospital at Drumright. Since the recent death of Dr. J. C. Stevens the Drumright Emergency Hospital has been closed. The new hospital will take its place.

PENNSYLVANIA

Physician Convicted.—It is reported that Dr. Herbert Bryson, Cassville, who served in the M. C., U. S. Army, during the World War, with the rank of major, was found guilty by a jury at Huntingdon, September 23, on a charge of murder in the second degree. Dr. Bryson was charged with the murder of Mrs. Helen K. Haines of Washington, D. C., on April 8. The verdict carries with it a sentence of not more than twenty years in the penitentiary.

State Medical Meeting.—At the annual meeting of the Medical Society of the State of Pennsylvania, held in Scranton, October 2-5, under the presidency of Dr. Frank G. Hartman, Lancaster, the following officers were elected for the ensuing year: president, Dr. Lawrence Litchfield, Pittsburgh; president-elect, Dr. Howard C. Frontz, Huntingdon; first vice president, Dr. Martin T. O'Malley, Scranton; second vice president, Dr. Peter Barkey, Erie; third vice president, Dr. J. C. Booker, Fall River, and fourth vice president, Dr. Frank Memmett; secretary, Dr. Walter E. Donaldson, Pittsburgh, and treasurer, Dr. John B. Lowman, Johnstown. The 1923 convention will be held in Pittsburgh.

Oppose Hospital at Media.—Media citizens, including physicians, lawyers and business men, are against the establishment of a hospital for the treatment of indigent tuberculous patients on the Baltimore Pike, a short distance from Media, in Nether Providence Township, where the county commissioners have purchased 40 acres of land. The members of the local business men's association have made a formal protest against the building of the hospital, and now it seems that Dr. Edward Martin, commissioner of health of Pennsylvania, must approve the site before a hospital can be built. The people of Media hope through his nonapproval to keep the hospital out of this vicinity.

American Red Cross Activities.—The Southeastern Chapter of the American Red Cross plans to install sixteen public health nurses in nearby counties if its sixth annual roll call, November 11-17, is successful. These plans were discussed at a meeting of the representatives of fifty-eight branches, September 21, at the roll call headquarters, Philadelphia. The Red Cross already has twenty-seven public health nurses in adjacent counties.——Ground was broken, September 3, for the memorial hospital to be erected by the emergency corps of the Southeastern Pennsylvania Chapter, disaster relief division of the American Red Cross at Valley Forge. This hospital is being erected as a memorial to the Red Cross workers who died or were killed during the World War. The site is in the rear of the Washington Memorial Chapel.

Pharmacy College Plans New Home.—A million dollar campaign for the construction of new buildings and the establishment of a permanent endowment fund for the Philadelphia College of Pharmacy was opened at the quarterly meeting of members of that institution, September 25. Admiral William C. Braisted, president of the college, announced that the president, the officers, the board of trustees and the faculty had already contributed $60,000 for the purchase, October 1, of a new site for the college at Forty-Third Street and Woodland Avenue. The old buildings at 145 North Tenth Street have long been inadequate to meet the need of the rapidly increasing enrolment. On the new site, classrooms, an administration building and laboratories will be erected. A great research laboratory will be built, which will cooperate with a medical school of the city and with the city hospitals.

UTAH

Hospital News.—A new addition will be erected at the Dee Memorial Hospital, Ogden, by the Latter Day Saints Church at Idaho Falls. The institution will have a capacity of 150 beds when completed.

Prison Physician Appointed.—Dr. George A. Allen, Salt Lake City, has been appointed by the state board of correction as physician to the state prison. Dr. Allen is a graduate of the University of Illinois and succeeds Dr. Leo F. Hummer.

SOUTH CAROLINA

University News.—With the largest enrolment in its history, the Medical College of the State of South Carolina opened its ninety-fourth session, September 21. Two hundred and ninety students enrolled. Dr. Bowman C. Crowell was appointed professor of pathology to succeed Dr. Kenneth M. Lynch. Dr. Crowell was formerly connected with the Oswaldo Cruz Institute of Rio de Janeiro, and he has also spent considerable time in the Philippines as pathologist at the School of Medicine and Surgery, Manila, the Bureau of Science and the Graduate School of Medicine, Manila. At one time, he served as president of the Philippine Islands Medical Association.

TENNESSEE

Fund for Health Center.—A drive to raise $23,000 for the Health Center in Knoxville will be conducted by the Kiwanis Club, October 15-20.

Gift for Medical School.—The Carnegie Foundation has presented the sum of $300,000 to Meharry Medical College (colored), Nashville, it was recently announced at the Northeast Ohio Methodist Episcopal Conference.

Personal.—Dr. William N. Day, Lone Mountain, arrived in New York, September 3, on the *Laconia* from Liverpool. ——Dr. William D. Haggard, president of the St. Thomas Hospital, Nashville, gave an illustrated lecture on the Passion Play at Oberammergau, recently.

VIRGINIA

Amalgamation of Health Departments.—Arrangements have been made for the consolidation of the health departments of Charlottesville and Albemarle counties, with Dr. William S. Keister as health officer in charge. Dr. Keister was formerly director of the county health department.

Public Health School.—The Richmond School of Social Work and Public Health opened for its sixth session, September 27, with an increase in its faculty and a much greater variety of courses, and with enlarged quarters and facilities. Three courses will be offered, one in social service, one in recreation and physical education and a graduate course in public health nursing.

WEST VIRGINIA

New Building for St. Luke's Hospital.—A new $100,000 building will be erected in the near future at St. Luke's Hospital, Bluefield.

Personal.—Mrs. Nellie Noel, superintendent nurse of the Princeton General Hospital, Princeton, has been appointed a member of the state board of examiners for nurses, to succeed Dr. Irene B. Bullard.——Dr. Morris Weiner will have charge of the City Hospital, Morgantown, while Dr. Irvin Hardy is taking a graduate course in Europe.

WISCONSIN

Tuberculosis Conference.—In cooperation with the Wisconsin Antituberculosis Association and the Milwaukee Association of Commerce, the Mississippi Valley Conference on Tuberculosis was held in Milwaukee, October 9-11, under the presidency of Dr. Robinson Bosworth, St. Paul.

Personal.—Dr. Mynie G. Peterman, Merrill, formerly chief resident physician of the City and County Hospital, St. Paul, has accepted a position in the department of surgery of the Mayo Clinic, Rochester, Minn.——Dr. Lewis W. Dudley has been appointed superintendent of the Wisconsin State Tuberculosis Sanatorium at Wales, to succeed the late Dr. Robert L. Williams.

Milwaukee Physicians' Association.—At the annual meeting of the association, Dr. Hugo Siekert was elected president; Dr. Emil H. Sutter, vice president, and Dr. Benn P. Churchill, secretary-treasurer. Announcement was made of the purchase of three-quarters of a mile of shore line at Silver Sands, Lake Michigan, on behalf of the association for the establishment of a summer colony for the benefit of the members and their families.

Placarding on Suspicion.—The village of Shorewood, adjoining the city of Milwaukee, has put into successful operation a plan whereby the prevalence of communicable disease has been greatly reduced and school attendance has been increased. Children suspected of having communicable diseases are immediately excluded from school and isolated until a diagnosis can be made. Until a decision is reached, the child's home is placarded with a card stating that whooping cough or scarlet fever, etc., is suspected. This idea of isolation first and diagnosis afterward has proved successful, even though it involves considerable personal inconvenience.

CANADA

New Tuberculosis Bulletin.—The first number of the *Canadian Tuberculosis Association Bulletin* has recently been issued and distributed among 20,000 English and 3,000 French. This issue contains a digest of tuberculosis deaths for eight of the nine provinces of Canada in 1921.

Cornerstone of Medical Science Laboratory Laid.—Dr. John Stewart, dean of the faculty of medicine of Dalhousie University, Halifax, laid the cornerstone of the new medical science building for Dalhousie University, September 29, with the trowel that Lord Dalhousie used more than 100 years ago to lay the cornerstone of the first Dalhousie building. This building will house the departments of biochemistry, physiology, pharmacology and hygiene. President Mackenzie took occasion to emphasize the necessity of college confederation from the point of view of economy in the rapid development now demanded of universities.

Public Health News.—Persons attending fall fairs in fifteen towns in Western Ontario will receive afternoon and evening health talks by radio, broadcasted from London, Ont., as a result of an arrangement made by the Western Ontario Academy of Medicine in cooperation with the London War Memorial Hospital for Sick Children, the Provincial Board of Health and other interested organizations. The program will include a daily talk on the purpose of the Sick Children's Hospital.——Outstanding in the health statistics for the Province of Ontario, just tabulated, is the increase in infantile paralysis, as compared with the corresponding month of 1921. There were fifty-five cases and nine deaths in 1922 as compared with seventeen cases and one death in September, 1921. The number of smallpox cases are only about one third of that reported a year ago. The total number of deaths from all causes is reduced by fifty-two, with a total of thirty deaths by violence.

Massachusetts-Halifax Health Commission.—Clinics were held every Thursday by the staff of the commission in the recent graduate course given in the Maritime Provinces by Dalhousie University for the medical profession. The commission has recently completed a year's work in prevention of tuberculosis. Dr. T. Thaddeus M. Sieniewicz has directed six clinics during the year, and there are 744 cases under surveillance. A public health nurse takes notes at the tuberculosis clinics in order to see that the treatment is carried out in the homes. A visiting housekeeper also makes periodical visits to the homes, and malnourished children are enrolled in nutrition classes. Cases are sent to the Kentville Sanatorium or to the recently opened City Tuberculosis Hospital. The services of Dr. Sieniewicz are at the disposal of the city practitioners, and his services are free as a lecturer to any club or society. A series of sixty lectures on tuberculosis were delivered by him at Dalhousie University.

University News.—The Alumni Federation of the University of Toronto is again receiving applications for loans to students who have been overseas, but the demand is falling off as most of the men who entered shortly after the end of the war are now in their final year, and the registration of overseas students is decreasing.——A memorial, in the form of a stained glass window, dedicated to Lieut.-Cols. John McCrae, R. P. Campbell and H. B. Yates, formerly of the teaching staff of the Faculty of Medicine, McGill University, Montreal, who were killed in the World War, was unveiled recently in the medical building of the university by Sir Arthur Currie, principal of McGill University. The Rev. Canon J. L. Almond presided at the dedication ceremony. Later in the day, the new biologic building of McGill University was formally opened by Sir Charles Sherrington, F.R.S., Waynflete professor of physiology, Oxford University, England, and president of the Royal Society. Numerous other medical men were in attendance, including Dr. Harvey Cushing, Harvard University, Boston; L. B. Mendel, Yale University, New Haven, Conn.; W. G. MacCallum, Johns Hopkins University, Baltimore, and Dean Alexander Primrose, University of Toronto.——The Alumni Federation of the University of Toronto is arranging for a chair of appointments, to assist both graduates and undergraduates in obtaining employment. Already steps have been taken to assist graduates to positions, but this has, for the most part, been confined to those who were in receipt of financial assistance from the Alumni Federation; and it is generally felt in university circles that such a department is a necessity.

GENERAL

American Electrotherapeutic Association.—At the annual meeting of the association in New York, Dr. Frank E. Peckham, Providence, R. I., was elected president. Dr. Abram Bern Hirsh, New York, was reelected recording secretary and Dr. John Willard Travell, New York, treasurer. Dr. Richard Kovacs is corresponding and financial secretary.

American Association for the Advancement of Science.—The seventy-fourth annual meeting of the American Association for the Advancement of Science, together with associated societies, will be held in Toronto, Canada, December 27-31, under the presidency of Prof. Eliakim H. Moore, Ph.D., University of Chicago. Prof. L. O. Howard, of the United States Department of Agriculture, is the retiring president of the association.

New Hospital in the Far East.—The contract has been awarded for St. Luke's Hospital, to be erected in Tokyo at a cost of $400,000. The Department of Missions has made the erection of this institution possible, to take the place of the temporary buildings erected during the last twenty years. It is proposed to double the present capacity. It it expected that the new buildings will be erected within the next two years and that when completed the new hospital will be the largest and best equipped hospital under foreign patronage in the Orient.

Physical Examination of Postoffice Employees.—Henry S. Dennison, welfare director of the Postoffice Department, has started on a trip of inspection through the middle West, to secure first hand data on the welfare work being conducted in the postoffices of this section of the country. Mr. Dennison will make an investigation of the success of the physical examinations of postoffice employees, made by the U. S. Public Health Service in fifty-seven cities of the United States as a result of the request of Postmaster-General Work. Among the cities he will visit are Chicago, Cleveland, Buffalo, Detroit, Grand Rapids, Milwaukee, Omaha, Kansas City, St. Louis, Cincinnati and Indianapolis.

Causes of Death Among Miners.—An investigation has been started by the U. S. Bureau of Mines to determine the causes of death among miners in the principal mining districts. A study of this character has been made in the coal mining districts of Indiana by Dr. H. R. O'Brien. The data were obtained from a tally of the death certificates in the files of the Indiana State Board of Health. For comparative purposes, similar figures were obtained on farmers (as another industrial class) and on all other males 16 years of age and over. A similar study of the mining industry in Missouri was made by Dr. Bradford Massey. Investigations along this line will be made in other mining communities as opportunity permits, in order to obtain sufficient data on which to base definite conclusions.

Birth and Infant Mortality Rate for 1921.—The Department of Commerce will soon issue a bulletin showing for each state and city in the birth registration area the number of births and the infant mortality rate for 1921. These figures cover a population of 70,425,705, and show 1,714,261 births, 825,511 deaths at all ages, and 129,588 deaths under 1 year of age. This gives a birth rate of 24.3 per thousand population, and a record low death rate of 11.7 per thousand; also a record low infant mortality rate of 76. The rates in 1920 for the birth registration area were: birth rate, 23.7 per thousand population; death rate, 13.1 per thousand, and infant mortality rate, 86. For the states, Oregon has the lowest infant mortality rate (51), and Delaware the highest (98); for cities of 100,000 population or more, Portland, Ore., has the lowest infant mortality rate (50), and Fall River, Mass., the highest (114).

Bequests and Donations.—The following bequests and donations have recently been announced:

Presbyterian and St. Luke's Hospitals, New York, equal shares of one half of the estate of John H. Flagler, unofficially estimated at about $2,000,000.

Hospital for Joint Diseases, New York, $796,704; Mount Vernon (N. Y.) Hospital, Presbyterian Hospital and the Methodist Episcopal Hospital, New York, each $25,000, under the will of Mrs. A. Gertrude Cutter.

Perkins Institution and Massachusetts School for the Blind, each $25,000; Home for Incurables and Cullis Consumptives Home, Dorchester, Mass., each $15,000; Home for Aged Couples in Boston, $10,000; Massachusetts Society for the Prevention of Cruelty to Children and the Dorchester Relief Society, each $5,000, under the will of Mrs. Alice W. Torrey of Boston.

Presbyterian Hospital, Philadelphia, $20,000, and one half of the residue of her estate, by the will of Mrs. Mary Jane Ross of Charleston, S. C.

Hahnemann Medical College, Philadelphia, $5,000, and the Homeopathic Hospital, West Chester, Pa., $4,000, by the will of Dr. Charles F. Bingaman, Pittsburgh.

Abington (Pa.) Memorial Hospital, $600 by the will of William S. Stuppe.

William Major Memorial Hospital, Shelbyville, Ind., $1,977, from the sale of building lots, and a donation of one lot from James B. Kennedy.

For a hospital at Westerville, Ohio, a plot of ground 200 feet square, by S. P. Sanders.

A free home for tuberculous children near Manitou, Colo., has been provided for by the will of the late Mrs. Edith H. L. Sobernheimer.

National Physical Education Service.—Enactment of legislation in twenty-eight states, partially effective in providing physical education and health training for schoolchildren, and an increase of $683,000 in its annual expenditures for physical education are two outstanding results of the work of the national physical education service for the last three years, according to a report made public recently. The state campaigns for additional legislation will be continued, with the aim of giving every child in the nation opportunity for health and normal physical development. The report states further:

> Although the progress during the last three years has given this fundamental training to 500,000 additional children, yet, at the same time only one tenth of the 22,000,000 children of school age are being reached. State campaigns will be pressed during the coming winter in eight of the middle western states which have not yet enacted legislation. The inadequacy of many of the state laws indicates that federal cooperation with the states will be necessary in order to insure the early extension of physical education for the schoolchildren of the nation. Draft statistics, reporting more than one third of the young men physically disqualified for full military service, showed the result of neglect of youthful training for physical fitness. A thorough system of physical education for all children up to the age of nineteen, including adequate health supervision and instruction, would remedy conditions revealed by the draft, and would add to the economic and industrial strength of the nation. National leadership and stimulation will be necessary to induce the states to adopt a wise system of physical training.

The report further states that "the federal congress will be urged to take action in line with the pledge included in its national platform promising physical education with federal aid." The national committee of the physical education service include Walter Camp, Dr. Charles Mayo, Mrs. Mary Roberts Rinehart and Dr. Thomas A. Storey.

Proposed Revision of International Sanitary Treaty.—During October, a convention will be held at Paris, France, to consider proposed revisions of the International Sanitary Treaty of Paris of 1912. Dr. Hugh S. Cumming will attend at the special invitation of Dr. T. Madsen of Copenhagen, who is chairman of the committe on international standardization of serums and laboratory products. Other members of the committee are Professor Kolle of the Royal Laboratory of Milan, and Dr. Albert Calmette, director of the Pasteur Institute. Dr. George W. McCoy, director of the Hygienic Laboratory of the U. S. Public Health Service, who is now in Europe, will also attend the convention. Thirty-eight maritime nations will be represented at the convention. Among the questions to be discussed will be the mutual reporting of quarantinable diseases by nations; cooperation between nations in the treatment and care of immigrants afflicted with disease, and uniform standards in the preparation of serums and antitoxins, so that such medicinals, when shipped from one country to another, may be accurately and scientifically used. In the existing treaty of Paris, no recognition was made of rat-plague; typhus was not mentioned, because not threatening at the time of making the treaty. Also, it is said, the treaty does not give recognition to yellow fever in accordance with modern knowledge. As the representative of the United States government, it is understood that Dr. Cumming will ask for safeguards for the protection of public health in the United States against diseases directly due to immigration from European and Asiatic countries. The Surgeon-General will also meet with the International Sanitary Service at Brussels, which has already been organized and is expected to be fostered, in part, by the Rockefeller Foundation. At this conference will be discussed plans for the exchange of health officials among nations, for the purpose of observation, study and cooperation. Dr. Cumming will also make a brief stay at Geneva, Switzerland, in connection with quarantine and public health matters.

LATIN AMERICA

Third American Child Welfare Congress.—Our exchanges record the great success of this meeting which convened at Rio, August 27, with Dr. Olintho de Oliveira presiding, and with 2,500 inscribed members.

Brazilian Congress of Pharmacy.—The *Brazil-Medico* relates that the pharmacists of Brazil have organized a ten-day conference, to open, October 12, and to be officially known as the First Brazilian Congress of Pharmacy.

Festival Number of the Brazil-Medico.—Our Rio de Janeiro exchange is planning a special souvenir number in honor of the national centennial celebration. The festivities of the celebration suspended all regular work, so that the souvenir number has been delayed.

Brazilian Neurology Congress.—The *Brazil-Medico* reports with much detail the proceedings of the Second Brazilian Congress of Neurology, Psychiatry and Forensic Medicine, which convened at Rio in August, with Prof. Juliano Moreira presiding. The date was also the eighty-first anniversary of the foundation of the Rio psychiatric hospital. Prof. Henrique Roxo was the secretary of the congress and Dr. U. Vianna, treasurer.

University Interchanges.—Among the European university professors who have been lecturing by invitation in South America is Dr. P. Alessandrini of Rome and Prof. V. Ascoli's service. He lectured at Buenos Aires on tuberculosis as studied by him with the roentgen rays. Dr. J. L. Faure of Paris, the successor to Pozzi in the chair of gynecology, has also been lecturing at Buenos Aires. He is accompanied by Dr. Douai.——Dr. Max Nonne of Hamburg, who has been lecturing at Rio de Janeiro, has returned to Germany. His special theme was neurosyphilis.

Election of Officers.—The *Archivos Brasileiros de Medicina* states that at the recent annual meeting of the Pernambuco Medical Society, Dr. U. Pernambuco was elected president; Dr. A. Medeiros, vice president; Dr. A. Lima, secretary; Dr. F. Clementino, treasurer, and Dr. A. Ramires, librarian.——The Bahia Medical Society has elected Dr. Luiz Pinto de Carvalho president for 1922-1923; Dr. C. O. Ferreira de Moura, first vice president, and Dr. S. Barrozo, second vice president; Dr. E. Diniz Gonçalves, secretary general; Dr. Alvaro Fróes da Fonseca and Dr. E. Vidal da Cunha, secretaries, and Dr. C. Levindo de Moura Pereira, treasurer.

Personal.—Dr. Juan C. Segovia has been appointed to take charge of the newly founded laboratory of the national public health service in El Salvador. Dr. Luis V. Velasco is chief of the public health service, and the new laboratory is due to his initiative and efforts, with some pecuniary aid from the Rockefeller Foundation.——The recent birthday of Dr. Silva Santos, formerly professor of anatomy at Rio, was celebrated by his former pupils and friends.——The Rio Faculdade de Medicina tendered a reception to Professor Lemaitre of Paris and Professor Cacace of Naples and the other delegates to the American Child Welfare Congress and the Brazilian Child Protection Congress. The delegates from Argentina, Uruguay, Ecuador and Peru made brief addresses.——Dr. Delfor Del Valle has resigned the position of director of the Asistencia Pública of Buenos Aires. The *Semana Médica* states that his friends tendered him a banquet on the occasion. Dr. Fermin Podriguez has been appointed to succeed him.——Dr. Jacinto Avilés and Dr. J. Gómez Brioso have returned to Porto Rico from a trip to the United States, and Dr. F. Hernández, director of the public health laboratory, has left for a stay in New York.——Dr. J. Capo of San Juan, Porto Rico, has sailed for several months in Spain.——Prof. José Arce and Prof. David Speroni have been appointed delegates from Argentina to the Sixth Latin-American Medical Congress, which convenes at Havana, November 19. The *Semana Médica* mentions that Dr. Speroni has been collecting Argentine medical works to take with him as a gift to the library of the Havana faculty of medicine.

FOREIGN

Czech Tuberculosis Society.—The Czech Scientific Tuberculosis Society will convene at Prague in the spring of 1923. This society was founded in 1920 for the purpose of promoting research in tuberculosis. Various scientific problems in tuberculosis are being studied in the different medical departments of Prague University, in connection with the forthcoming congress.

The Swiss Society for the Advancement of Science.—The Schweizerische naturforschende Gesellschaft held its hundred and third annual meeting at Bern in August. Two new societies were incorporated with it, one for history of medicine and one for general science. There now are federated with it twelve various national scientific societies and twenty-three cantonal organizations.

Inauguration of Pathology Institute at Freiburg.—The new building was formally inaugurated last month with an address by Professor Aschoff on "The Importance of Pathologic Anatomy for Social Medicine." He emphasized that each class of society, each industry, each occupation has its special pathologic anatomy, and only by studying this is it possible to keep the individual at the maximum of physical health and efficiency and ward off the pathologic conditions.

Sanitary School Planned for Russia.—Dr. Mark D. Godfrey, Columbus, Ohio, in charge of the medical work for the American Relief Administration at Nijni, Russia, will open a sanitary school in that city this winter. The pupils will be instructed in cleanliness and the purposes of disinfection as a precautionary measure against conditions which may develop this winter in Russia.

First International Congress of Open Air Schools.—The main purpose of this gathering held at Paris, recently, was to discuss ways and means for adapting the schools of the day to the open air principle, while awaiting the real open air schools of the future. Among the resolutions adopted was one to the effect that brain work should be restricted to four hours, and the remaining two hours be devoted to the practice of hygiene out of doors. A visit to some monument, museum or factory, should be planned each week. Teachers should be encouraged to hold their classes in the open air whenever the weather permits, and one out-door school for weakly children should be organized in each suburb or for each hundred thousand inhabitants. Other resolutions advocated that a national committee be formed in each country, to insure cooperation, and that an out-door boarding school in the rural district be founded for the weakly children who do not thrive in the cities.

Total of Arsphenamin Fatalities.—THE JOURNAL mentioned, July 1, 1922, page 50, that the German committee appointed to investigate the mishaps from the use of arsphenamin reported that the average of mishaps was about 1:10,000. Our exchanges are now commenting on the second report of the committee appointed in England by the British Medico-legal Society, in 1918, to investigate the toxic action of arsphenamin. The report embraces 340,000 German and 140,000 English courses of arsphenamin treatment. The number of injections averaged 4.6 in Germany and 4.5 in England. The total fatalities per 10,000 cases averaged 3.8 in Germany and 4 in England. This is a proportion of 0.65 per 10,000 injections. The total of complications in the English records was 16 per 10,000. The committee report stated that arsphenamin is more effectual than any other remedy, and that the interests of the patient require arsphenamin treatment, notwithstanding the very small number of unavoidable fatalities.

Centenary of Sir Christopher Wren.—Dr. R. Dawtrey Drewitt has been appointed representative of the Royal College of Physicians on the committee that has been appointed to make arrangements for commemoration week, beginning, Feb. 26, 1923, of the bicentenary of Sir Christopher Wren (1632-1723). Sir Christopher Wren before he entered as an undergraduate at the University of Oxford was assistant to Sir Charles Scarborough, physician and mathematician, in making and demonstrating anatomic preparations and in various experiments for his anatomic lectures at Surgeon's Hall. When 21 years old, Wren executed a number of drawings which appeared in Thomas Willis' famous *"Cerebri Anatome Nervorumque Descriptio et Usus"* (1664). Wren was one of the first fellows of the Royal Society and was the architect of the third home of the Royal College of Physicians of London; but he was famous as the architect of St. Paul's Cathedral, London, where he was buried, in 1723. It is proposed to organize a procession to St. Paul's Cathedral, where a memorial service will be held and a wreath laid on his tomb.

Personal.—Prof. H. J. Hamburger, professor of physiology and histology at the University of Groningen, Holland, arrived in New York, September 22, on the *Rotterdam*. He will lecture on recent advances in physiology, the opening address to be given at Johns Hopkins University, Baltimore.——Dr. Alberto C. Bonaschi, secretary of the Italian Chamber of Commerce, arrived on the *Colombo*, from Naples, September 19. He has come to arrange for a group of medical men to come from Italy to take up graduate work in the United States. This is the outcome of an exchange plan, about twenty-five young Americans having just completed such courses in Italy.——Prof. J. J. Van Loghem, director of the department of tropical hygiene at the Colonial Institute, Amsterdam, delivered a lecture in London recently on the "Transmission of Plague by Rats." He confined himself to bubonic plague, which he regards as being the plague of all the great historical epidemics.——As the result of burns received while experimenting with radium, Dr. Hideljich Kinoshita, professor of science at the Imperial University of Tokyo, may lose his eyesight.——Dr. Arnold Chaplin will deliver the Harveian oration at the Royal College of Physi-

cians, London, October 18.——The Bradshaw lecture will be delivered by Sir Maurice Craig of London, November 2. He will speak on "Mental Symptoms in Physical Disease."—— Dr. Robert O. Moon, London, will deliver the Fitzpatrick lectures, November 7. His subject will be "Philosophy and the Posthippocratic School of Medicine."——The Belgian Académie de médecine has elected as foreign corresponding members, Professor Bar and Dr. Cabanés of Paris, Professor Bettencourt of Lisbon, and Dr. Fonzes-Diacon of Montpellier.

Deaths in Other Countries

Dr. **Wertheim Salomonson,** professor of neurology at the University of Amsterdam and author of numerous works on the heart, photography of the retina in the living subject, etc.; aged 58. He was a pioneer in introducing roentgenography into the Netherlands, and the *Nederlandsch Tijdschrift* remarks that his name is found in all the borderland topics where physics and medicine meet.——Dr. **C. A. Pekelharing,** professor of physiologic chemistry and histology at the University of Utrecht, one of the editors of the *Zeitschrift für physiologische Chemie* and of the *Nederlandsch Tijdschrift voor Geneeskunde;* aged 74. These two scientists of the Netherlands died the same week. They were both frequent attendants at international gatherings.——Dr. **C. Scagnondi** of Ravenna; recently stabbed by a man in revenge for the physician's certifying that he had tuberculosis, as this lost him his position.——Dr. **A. Montalti,** professor of legal medicine at Palermo.——Dr. **J. Katzenstein** of Berlin, professor of diseases of the ears and throat.——Dr. **S. Gross,** privat-docent in dermatology and syphilis at the University of Vienna, known by his works on the secondary sexual characters, etc.——Dr. **Léon Cahn** of Paris, whose degree dates from 1888.——Dr. **C. Paradis** of Brussels.—— Dr. **L. Perrin** of the Marseilles medical faculty.——Dr. **E. A. Fries** of Stockholm, physician to the railroads.——Dr. **C. A. Walter** of Göteborg, aged 69.——Dr. **E. de Reynier** of Neuchâtel, Switzerland, aged 90.——Dr. **C. Bonvin** of the Sion Hospital, Switzerland, aged 95.——Dr. **L. Faisans** of Paris, director of the state railroads medical service, aged 71.—— Dr. **J. Passet,** formerly instructor in surgery at Munich, aged 67.——Dr. **G. Stieler,** also of Munich, aged 79.——Dr. **T. V. Møller** of Rudkøbing, Denmark, aged 72.——Dr. **S. Mircoli,** formerly professor of clinical medicine at Rome and at Genoa; recently, after years of illness, aged 63.

Government Services

American Legion Convention

The National Convention of the American Legion will be held at New Orleans, October 16-20. Special leave of absence has been granted for trainees desiring to attend. No transportation will be paid by the government under any circumstances for trainees attending this meeting.

The Veterans' Bureau and the Physician; Also the Chiropractor

The mistakes of the Veterans' Bureau in the past have been largely due to failure to appreciate the fundamental medical importance of the bureau's problems, and to a tendency to overrule or even ignore the physician's honest opinions by assumption of an authority which the law never contemplated. Such is the opinion of Col. C. R. Forbes, director of the Veterans' Bureau, who in addressing a conference of district managers, September 18, said:

> The mistakes of the past were largely due to failure to appreciate the fundamental medical importance of our problems and also a tendency to overrule or even ignore the doctor's honest opinions by an assumption of an authority which the law never contemplated. Some of these acts were errors of the heart and may be forgiven, but enormous abuses in this respect not only of the letter but of the spirit of the law have occurred in the beginning and occur now to some extent, and for which there is no excuse and which perhaps cause irreparable harm to the character of thousands of young men by helping to destroy their self-reliance and their natural ambition to succeed through their own efforts.

Now that the Veterans' Bureau has formally recognized the essential value of medical opinion with respect to matters medical, it is hoped that it will accept the judgment of the medical profession with respect to the inadvisability of training veterans as chiropractors and will discontinue the propagation of such quackery.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Sept. 18, 1922.

The Reimbursment of a Physician Mulcted in Damages for the Treatment of a Fractured Femur

In THE JOURNAL, Dec. 24, 1921, p. 2072, the case was reported of a country physician who had to pay damages and heavy costs to a woman whom he treated for fracture of the upper third of the femur by a Thomas splint and extension. Union took place with only one-half inch of shortening. He warned the patient against putting weight on the limb. On her return home the limb suddenly gave way. There was fracture of the neck of the femur, for which an operation was performed. An action for damages was brought, in which the physician's treatment was criticized. It was said that he should have used an anesthetic in setting the fracture, and also the roentgen rays. As a matter of fact, the roentgen-ray apparatus was out of order in the country hospital to which the patient was taken. However, the great balance of expert medical evidence was on his side. One well known surgeon stated that an anesthetic was not indicated, as struggling would have increased the damage. He attributed the refracture to the patient's putting too much weight on the limb, which she was warned not to do. The failure to use the roentgen ray weighed strongly with the jury, which gave a verdict for the plaintiff with $3,750 damages. The costs of the action brought the physician's loss up to $9,000. Widespread sympathy was felt for him in the profession, as it was held that he had treated the fracture by approved modern methods, and was not responsible for the untoward result. A fund was opened to reimburse him, and Sir Robert Jones and other eminent orthopedic surgeons supported the movement. In a letter to the medical press, announcing the closure of the fund, they state that $8,600 has been subscribed. They point out the great importance of the verdict to physicians, as it shows that although a practitioner may have exercised all the skill at his disposal and adopted approved modern methods, he has to run the risk of an adverse verdict if the case does not go well. The moral is drawn that in no circumstances should a physician engage in practice without joining a medical defense society. The interest taken in the case is shown by the fact that subscriptions were received from such distant places as New Zealand, Tasmania, Queensland, Toronto, Oporto, Nigeria, Khartoum, South Africa and Bagdad. The highest individual subscription was $130, and the lowest $0.50.

Plague in Australia

A serious outbreak of plague, which took place at Sydney, has been dealt with energetically and stamped out. The infection originated in a steamer which arrived from Brisbane in September, 1921, on which a fatal case of plague occurred. Six dead rats were found on this steamer, and bacteriologic examination of one revealed infection with plague. Before the arrival of the steamer, rats were constantly being caught and found free of infection, but soon afterward infected rats were caught on the wharf and in the neighborhood. Sixteen cases of plague occurred in the human population round the docks and were traced in nearly every case to infected rats. It has been found that quarantine measures in New South Wales cannot secure ports from invasion without imposing too severe restrictions on commerce. Reliance is placed on rat-proofing of wharves and buildings, and rat-catching. In Sydney a process of reconstruction is gradually being carried out, and much has

already been done in rendering wharves and buildings rat-proof by concrete flooring and sheeting. When the outbreak began, the rat-catching staff was largely increased. Whenever an infected rat was found, the premises were immediately quarantined and disinfected. The process, which consisted of the destruction of both rats and fleas, took days or hours, according to the method employed. At the same time an area of several street blocks around the infected premises was intensively searched for rats, which were poisoned or trapped. The best method of disinfection was found to be hydrocyanic gas. Control rats in cages, and fleas in test tubes, were buried deeply among the goods of the warehouse. But sometimes a more troublesome method, which took days, had to be adopted. All the stock had to be removed by gangs of workmen, so as to discover the rats. The premises were not released from quarantine until all defects had been made good, rat holes filled up, basements concreted, and the premises put in rat-proof condition. Antiplague serum was prepared in Sydney by Dr. Bradley, who used a modification of Yersin's method. He immunized horses by dead, and later by living, cultures of bacilli. The results are considered satisfactory; the total mortality of the cases was 25 per cent., while that of those admitted to the hospital and treated at once with serum was 15.4 per cent.

Health Lectures for Criminals

A curious new departure has been made by the People's League of Health. With the approval of the government, it has extended its propaganda to prisons, where it has arranged for lectures on "Health of Mind and Body: How to Obtain and Preserve It." Criminals are generally very ignorant persons, and as ignorant of hygiene as of other things. It is therefore hoped that good results will be obtained from the movement.

Sir John Bland-Sutton's Travels on the Amazon

Alone among English surgeons, Sir John Bland-Sutton maintains the hunterian tradition of regarding man and his diseases as merely a chapter in the book of life which must be read through by him who wishes to understand. Early in his career he turned his position as prosector of the Zoological Gardens into account by describing the tumors, cysts and other lesions of animals. This he did in a series of papers, published in the *British Medical Journal*, which attracted great attention, as it was a revelation in those days to find how closely animal diseases resembled human diseases. Sir John has also been a keen naturalist, and has been able to gratify his taste by travels all over the world. In 1911, he published "Man and Beast in Eastern Ethiopia," which was an account of his observations in British East Africa, Uganda and the Sudan. He has just returned from a visit to the Amazon. For many years he desired an opportunity of visiting that mighty river, for its physical geography, natural history and ethnology, and also to see tropical diseases in situ. He went to Para and then 1,000 miles up stream to Manaos, the center of the rubber trade. Here Dr. Wolferstan Thomas, who was trained at the Liverpool School of Tropical Medicine, gave him the opportunity of seeing the excellent arrangements for investigating and treating tropical diseases. Thanks to the antimosquito work, he found that yellow fever and malaria had almost been abolished. He considers that the occupation of tropical countries by Europeans has been hindered more by small biting insects than by the arrows and spears of savages, and that brilliant discoveries await investigators who combine a practical knowledge of bacteriology and entomology. He was able to get hold of two shrunken skulls for the museum of the Royal College of Surgeons. One of the Indian tribes has a method, when an enemy has been shot, of splitting the back of the head and shrinking down the skull to the size of an orange. The authorities do all they can to diminish the trade in these trophies, because a demand for them might lead to their production.

PARIS

(From Our Regular Correspondent)

Sept. 22, 1922.

The League of Nations in Relation to Hygiene

Acting on the report of M. Manuel Rivas Vienna of Chile, the plenary assembly of the League of Nations passed two resolutions proposed by the League of Nations Health Conference. By the first resolution, the assembly took official cognizance of the collaboration of the Health Conference in the work of the sanitary conference held in Warsaw (The Journal, May 6, 1922, p. 1400) and of the fact that the Genoa conference had turned over to the Health Conference the execution of the program outlined by the Commission on Epidemics. The assembly also noted with satisfaction the development of the epidemiologic service and the initiative taken by the Health Conference to introduce a system of exchange of sanitary personnel (The Journal, Sept. 23, 1922, p. 1961). In view of the fact that the League of Nations Health Conference constitutes a permanent need, the assembly declared it indispensable that this conference should be given within a short time the character of a permanent organization.

By the second resolution, the assembly called the attention of the various governments to the persistent danger of epidemics in eastern Europe, and invited them to give their financial aid in combating the peril. The assembly decided that the budget of the League of Nations should contain an allotment of 125,000 pounds sterling to aid the Commission on Epidemics in its work.

Fall in the Birth Rate

The Alliance nationale pour l'accroissement de la population française recently published a comparative table showing the birth rate in the ten largest cities of France during the first six months of 1921 and 1922, respectively. The number of births has decreased 10 per cent.:

	First Six Months of 1921	1922
Paris	27,489	24,238
Marseilles	6,303	6,176
Lyons	5,088	4,583
Bordeaux	2,941	2,629
Lille	2,587	2,353
Strasbourg	2,221	2,003
Nantes	1,967	1,875
Toulouse	1,642	1,534
Saint-Etienne	1,832	1,661
Nice	1,479	1,476

Unfortunately, it looks as if the figures for the second six months would be still more unfavorable, for the number of marriages entered into each month has been decreasing rapidly for the last two years, which is, however, only natural in view of the large number of marriages that followed the war. If the decrease in the birth rate is as great in the rest of the country as it is in the large cities, we shall have, this year, 80,000 births less than in 1921.

Addition of Student Delegates to the University Councils

According to a new decree concerning disciplinary affairs affecting students matriculated in the universities and affiliated schools that are administered by the university councils, henceforth two students regularly matriculated in a given university or affiliated school will be chosen to sit on the university council. These delegates are chosen by the student body by secret ballot; also four alternates, who take the place of the delegates in case these are prevented from serving, refuse to act, resign or terminate their studies before the expiration of their term of office. Candidates must be of age, of French nationality, and must have a clear

record as far as disciplinary punishment is concerned. The appointment is made for two years. If the delegates or alternates so chosen do not present themselves at the hour appointed for meetings of the university council, regular business can be carried on in their absence.

Hygiene and the Housing Problem

Monsieur C. Roëland, a specialist on questions of hygiene, attached to the municipal council, has recently initiated a plan in the form of a competitive contest between the owners of newly constructed buildings. In 1898, the municipal council opened a competitive contest for the most beautiful and best building fronts. But M. Roëland holds, with reason, that, under present conditions, the exterior appearance of a building is a secondary consideration, and that architectural beauty should bow before considerations of health and comfort. Monsieur Roëland points out that the number of slum districts has jumped from six to seventeen, and that these districts comprise 4,290 houses, which shelter 186,000 persons. In these seventeen districts, during the twenty-five year period from Jan. 1, 1894, to Dec. 31, 1918, there were 33,069 deaths from pulmonary tuberculosis. From 1918 to 1920, the technical branch of the public health service has made investigations in 118 houses classed as foci of tuberculosis. These 118 houses contain 3,609 lodgings, which are occupied by a total population of 7,834 persons, distributed as follows: 2,358 lodgings of one or two rooms (together, 3,209 rooms) housing 4,287 persons, which gives an average distribution of 1.3 persons per room; 1,251 lodgings of three rooms or more, comprising altogether 4,113 rooms occupied by 3,547 persons, an average distribution of 0.9.

The demolition of these 4,290 insanitary lodging houses would represent, at the present time, an expenditure of 992,251,000 francs, after allowing for the amount that would be realized from the resale of the lots and wrecked material. With financial conditions as they are, such a radical procedure is out of the question. It is, therefore, more in the nature of a palliative measure that M. Roëland proposes the institution of an annual competitive contest which would have an ameliorative effect on hygienic conditions in the cheaper tenements and contribute at least something toward the healthful character and the comfort of each lodging, including the janitor's lodge.

Aid for Russian Children

In a previous letter, I mentioned that Monsieur Etienne Gilson, professor at the Sorbonne, had been sent on a mission to the famine regions of Russia and Ukraine by the Comité français de secours aux enfants russes (THE JOURNAL, Sept. 16, 1922, p. 980). He has recently sent to the president of this committee a telegram in which he states that in the region between Odessa and Kherson, in a section nearly 100 miles wide, the famine is more terrible than last winter. The harvest has been a complete failure. The situation of the children is especially tragic. The French kitchens that are giving help at Odessa and Kherson are operating very successfully. There is, however, an urgent need of shower baths and shelters for the night, without which the children rescued from starvation will die of cold or become the victims of epidemics. The headquarters of the Comité de secours aux enfants russes is in Paris, 10, rue de l'Elysée.

A Reported Offer by the Rockefeller Institute

According to a recent newspaper report, the Rockefeller Institute had offered 200,000,000 francs to the Faculté de médecine of Strasbourg but the offer had been withdrawn, in favor of Brussels, as a result of the opposition on the part of the Faculté de médecine of Paris. The minister of public instruction has denied the truth of the report. He admits that the Rockefeller Institute recently instituted an inquiry among the medical schools of France, but no proposal with respect to the granting of financial aid, either as regards 200 million francs or any inferior sum, has been addressed either directly or indirectly to the Faculté de médecine of Strasbourg. However, the Rockefeller Institute has given evidence of the esteem in which it holds our medical profession by inviting, at its expense, several professors of the medical faculties of Paris and Strasbourg to visit the United States for the purpose of studying the organization of laboratories and public health work, which invitation has been gratefully accepted. As to the relations between the medical schools of the universities of Paris and Strasbourg, the official note of the minister of public instruction affirms that they have always been and still are most excellent.

BUDAPEST

(From Our Regular Correspondent)

Sept. 16, 1922.

Cardiac Neuroses

At a recent meeting of the Royal Medical Society, Dr. Hasenfeld suggested that functional disorders of the heart be classified as: (*a*) nervous weakness, synonyms for which are neurasthenia cordis and irritable heart (reizbares Herz); (*b*) cardiac palpitation; (*c*) pseudo-angina, also called sthenocardia and neuralgia of the cardiac plexus, and (*d*) abnormalities in rhythm: tachycardia, bradycardia and arrhythmia. Each of these symptoms may be secondary to organic disease of the heart, or to some nervous disease, generally functional. Frequently, however, any one of these symptoms may be the primary and sole disease. It is to such cases alone that the designation "cardiac neurosis" is properly applicable. Gerhardt (of Germany) states that more than half the patients who consult him for cardiac trouble suffer from disorders of innervation and have no valvular disease.

The differentiation between functional and organic disease is usually easy. It may be difficult in cases of palpitation with hypertrophy of the heart, and in pseudo-angina and arteriosclerosis. In cases of profound nervous prostration, in which cardiac symptoms predominate, it may be impossible to say which is primary and which is secondary. The following points are important: (1) Neuroses are most frequent in young persons, in whom the usual causes of organic disease, such as rheumatism, are absent; (2) there is often a family history of nervous disorders; (3) the pains and paresthesia in neuroses are generally diffused over the whole body, while in organic disease they are usually confined to the cardiac region, the left side and left arm; (4) arrhythmia and other abnormalities in the pulse are less frequent in nervous than in organic disease; (5) physical signs are absent in neuroses (even after long-continued cardiac neurasthenia the heart is not hypertrophied and there is no accentuation of the second sound); (6) other organs do not suffer secondarily; (7) the symptoms of cardiac neuroses are often more alarming than those of organic disease. The neurotic patient, instead of instinctively avoiding exertion, like those with organic disease, more often cries out and throws himself about.

A Case of Pseudohermaphroditism

Dr. Török exhibited, at the meeting of the Interhospital Association, photographs and casts from an individual, aged 23, with large breasts, large hips and a distinctly feminine appearance, who had a large clitoris with a distinct glans, ridges representing labia majora and slighter ridges representing labia minora, and leading to the meatus urinarius. There was no trace of hymen or vagina. On the right side, there was a large inguinal canal with an ovarian or testicular structure projecting into the labium majus, a similar structure accompanying the upper portion of the left canal. The

shoulders were straight and distinctly manly. There was sexual inclination toward the female, and, though brought up as a girl, the patient wished to assume male dress and chose the profession of a hairdresser.

Physician Sued for Error in Diagnosis

In a large provincial town, a case of considerable importance to the medical profession has recently been tried. It happened that the masseur of a fashionable sporting club, which had a large swimming place with Turkish bath, was attended for a skin trouble by a physician, who diagnosed syphilis. This opinion was conveyed by the patient himself to the management of the bath, with the result that the man lost his position. As a matter of fact, the malady was not syphilis, but simply an attack of scabies. The real nature of the disease seems not to have been disputed at the trial. The main point at issue was that of negligence; whether, by the exercise of reasonable care and skill, the error in diagnosis with all its serious results would have been avoidable in the era of reliable blood analyses. The judge held that the plaintiff's discharge was the direct consequence of the error, in spite of the fact that the plaintiff himself made the communication to the manager of the bath. The claim for 10,000 kronen was allowed, with costs.

VIENNA

(From Our Regular Correspondent)

Sept. 21, 1922.

The Danger of Tuberculous Infection in Schools

An interesting problem was presented by Dr. Peyser recently at a meeting of the Society for Pediatrics; he called attention to the possibilities for transmission of tuberculosis offered by the present method of teaching in public schools. It happens frequently, especially among the poorer classes, that a child showing manifest symptoms of active disease (cough, anemia, slight temperature, night sweats) is not kept at home, and thus may disseminate disease among the children in his classroom. Dr. Peyser made investigations in a school in Vienna from the third form of which two children with manifest pulmonary affection had been brought to his dispensary. He first of all obtained permission from the parents to make a tuberculosis test on the pupils by using Moro's ointment three times within a week and then injecting 1 mg. of tuberculin. By these means, patients that are unusually susceptible and thus show a high degree of infection are easily excluded.

In his series of investigations, Dr. Peyser found 30 per cent. of the children free from tuberculosis, a fair percentage for Vienna. The children were 8 years old. The average for this age has been figured out by Hamburger and Monti at 27 per cent. for this city. Even those children who were seated next to the child who had been originally examined were at the time of the examination free from tuberculosis. The sputum of the infected child was free from bacilli, so it was, manifestly, not a very active source of infection for the children in its company. The infection is probably due to conditions at home, or it may result from the food or from contact with tuberculous teachers. Further investigation will disclose whether older children with positive bacillary findings in the sputum are capable of infecting younger children. It appears from these researches that schools, as a rule, are not dangerous in this respect. Nevertheless, every child found suffering from lung disease should be kept away from school and brought under conditions favorable to checking the disease.

Result of Pasteur's Treatment Against Rabies

In a review of the results obtained by Pasteur's method of injection against rabies, Dr. Schweinburg gives interesting figures on this subject. In the years 1880 to 1889, the Austrian statistics office shows 3,024 persons bitten by animals, of whom 27 per cent. (822) died; but other statistics show much lower figures, going down as far as 2 per cent. As there is an alarming indifference on the part of some of the people because numerous animals that had bitten persons proved to be healthy, strict conclusions could not be drawn from such statistics. But recently the authorities had an excellent opportunity to investigate the problem, as, in 1913, the disease was imported into the district of Vienna, where a well managed institute and reliable administration of the board of health cooperated to give useful information. The number of cases reported—it may be safely said that almost all persons bitten by animals were reported—increased until 1918. Then, in August, it declined rapidly until, in 1919 (July), the epizootic could be declared extinct.

All persons suspected of rabies, as well as all persons treated for this disease, are brought to one central Pasteur institute in Vienna. The police are bound to report, at least once a year, every person who has been under treatment for this disease; and the reports are coming regularly. All postmortems in which there is a suspicion of rabies are also reported; thus no case can escape the attention of the institute. Altogether, in six and a half years, 1913 to 1919, 977 persons were treated who had been bitten by animals which afterward were proved to be infected. Of these persons, eight, or about 0.81 per cent., died. All of these had had severe injuries and were treated within eight days. But within the same period eight other persons died from rabies who had not been treated. It is clear that the institute has been notified of at least 90 per cent. of all injured persons; thus it must be admitted that the mortality of the untreated persons was much higher than that of the treated persons, for it is impossible that such a large number of injured persons should have escaped the knowledge of the institute as to justify the same number of deaths, i. e., eight, as the treated series show. As nearly all persons who died in spite of treatment were bitten by diseased dogs, the eight untreated persons were undoubtedly also bitten by dogs.

In the treated series, of 410 persons bitten by dogs, only six died; the occurrence of eight deaths in the untreated group would thus prove that Pasteur's treatment is a most powerful means to counteract the dangers arising from the bite of animals, and that immediate treatment is the only means of saving the life of the victim. It may be added that the animals were usually dogs. Cats were implicated in thirty-two cases, horses in four, and one person was bitten by a monkey.

The Result of Ligature of the Carotid After Twenty Years

Dr. Schönbauer presented, at a meeting of the Medical Society of Vienna recently, a man who, in the year 1902, had been stabbed in the neck, in the right carotid, and in whom the common carotid artery had to be ligated because the technic of suturing arteries had not at that time been perfected. Digital compression had temporarily saved the man's life. On the day following the operation, the left extremities were paretic. The symptoms gradually diminished, but twenty years later, spastic contractures were still present.

Experiments on animals demonstrate that the results of the ligature of the common carotid artery differ widely. If the circle of Willis is well developed, the exclusion of one carotid may be well borne. Temporary compression of one of the carotids should be tried to see whether the patient can stand the operation. On the other hand, a cortex that is already damaged by alcohol or disease will not stand the initial shock of the sudden shutting off of its blood supply, which a healthy cortex may sustain for some time without lasting detriment. Therefore, in judging such an operation,

all these points must be taken into consideration. The patient presented merely the spastic contractures of the left extremities in a mild degree; his mental and moral conditions were otherwise quite satisfactory, and during the twenty years which had passed between his injury and the demonstration, he had been healthy in all other respects and had been able to earn his living as a laborer.

The New Winter Term

In October, the new winter term of the university begins, lasting until the end of March. For the first time in many years, the number of new medical students is smaller than in the corresponding period of previous years. The figures are now known fairly definitely. The decrease is due to the drastic measures taken to cut down the number of first-year students flocking to the medical faculty. By putting obstacles in the way of those who do not desire to devote all their time to their studies, by handicapping the foreign beginners and by diminishing the number of working places at the anatomic theaters to 400, and by the natural falling off of numbers due to lack of patients and the consequent diminished means of teaching, the desired aim has been achieved. Nevertheless, the number of lecturers and teachers has even increased. Postgraduate teaching has obtained a firm footing in Vienna. Regular four-week courses will be held all the winter term in all important subjects, and in direct contrast to the endeavor to restrict first-year students, the increased influx of graduate students, i. e., physicians from the country and from abroad, is freely encouraged by the press and by advertisements in medical periodicals.

Reform of Pharmaceutic Studies

With the beginning of the winter term at the University of Vienna, in October, a new arrangement of the studies of pharmacy will come into force. By cooperation of the board of health, the board of education, the medical and philosophical faculty of the university and the board of apothecaries, the following rules were agreed on: The student desiring to take up the pharmaceutic studies must have passed an examination in Latin and Greek, arithmetic and general knowledge, as required for medical or juristic studies (eight classes of the so-called gymnasium). Then he is admitted to the philosophical department of the university where he has to study, in the first year, botany, organic and inorganic chemistry and physical subjects. In the second year he adds to these subjects physical and pharmaceutic chemistry. In the summer term of the second year, he has to take up pharmacognostic studies. In the third year, these studies are continued, and practical exercises in the technic of dispensing and prescribing are added.

Furthermore, the leading principles of hygiene: bacteriology, serology, disinfection and sterilization, as well as toxicology and pharmacodynamics, are taught, and also analysis of human excreta and secreta and a course on first aid. During the three years, practical instruction in all subjects taught is given. In the new curriculum, the student is given as much as possible practical knowledge, in laboratories and institutes. Theoretical knowledge comes second, but is not neglected. Courses on legislation pertaining to pharmacy, as well as the history of the latter, are also available to the students. A rigid examination must be passed at the end of the third semester (half year) and at the end of the third year. Both examinations are practical and theoretical, partly oral and partly written. The successful candidate is then called "magister of pharmacy." He is then allowed to work for at least one year in a dispensary, either in a hospital or with a private apothecary. He may then apply for an examination at the ministry of health to test his fitness to manage a dispensary. This examination comprises historical, legal and administrative commercial subjects, and only the successful candidate can apply for a license to run a dispensary or an apothecary shop.

If the "magister of pharmacy" desires to obtain a diploma as "doctor of pharmacy," he may continue his university studies at the philosophical faculty. One year after obtaining his degree as "magister," that is to say, after completing his fourth university year, the student may apply for a diploma by writing a scientific dissertation or essay on a subject of pharmacognosy, chemistry, botany or hygiene. Doctors of pharmacy will, no doubt, be preferred to simple "magisters" of the same vocation, as "magister" is about equivalent to the "bachelor" of the English university. Certain regulations pertain to the admittance of foreign students to Austrian pharmaceutic studies. They should have had a preliminary teaching nearly equal to that of our gymnasium; but if they desire only to follow up or to finish their studies here, without settling here, they will meet concessions as to their preliminary knowledge, so that they too can obtain their degree or diploma here and practice pharmacy in their native country.

BERLIN

(From Our Regular Correspondent)

Sept. 9, 1922.

The Campaign Against the Nostrum Evil

In view of the fact that considerable interest is taken in the United States as well in the fight against nostrums and a certain class of proprietaries, it may be of interest to your readers to learn what measures are being adopted and carried out in Germany with the same object in view. First, let me state that manufacturers and promoters of nostrums that constitute out-and-out frauds on the public are prosecuted in the courts, and on the basis of the law against illegal competition (*unlauterer Wettbewerb*) a conviction can be secured if it can be shown that, in advertising matter setting forth the supposed merits of the preparation, statements are made that do not coincide with the real value of the remedy. Under certain circumstances, a penalty can be imposed on such manufacturers on the ground of actual fraud. Against proprietaries themselves there is a decree still in force which was passed by the *Bundesrat* (federal council) in 1907. According to this enactment, two separate lists of Geheimmittel (proprietaries) and similar drugs or medicaments were prepared, for which the following regulations are in force: The label on the containers (and also the outside wrappers) in which these remedies are sold must bear, plainly visible, the name of the remedy and the name of the manufacturer. The price at which the remedy is to be sold must also be stated. It is not lawful to print on the inside labels or outside wrappers any form of recommendation, such as testimonials pertaining to the therapeutic effects of the remedy, nor may copies of such recommendations and testimonials be handed out along with the remedy or otherwise. If the pharmacist is not sure about the composition of a remedy, he can sell it only on a dated, written order of a physician. Any new supplies of the remedy require a repetition of the order. In the case of remedies that can be dispensed only on a physician's prescription, either the inside label on the container or the outside wrappers must bear the statement: To be dispensed only on a physician's order. Of special importance is the regulation prohibiting the advertising of these remedies. The distribution of prospectuses or the dissemination of any other information pertaining to the remedy will be regarded as a form of advertising. Of late, the combating of the nostrum evil has been possible in connection with the so-called *Umsatzsteuergesetz* (act pertaining to tax on the annual business turnover). According to this act, which enables tax officials to collect a tax on every article sold, proprietaries are among the articles sub-

ject to an increased tax. In this way, not only the state treasury receives a greater income from the sale of proprietaries, but the public, on whom the manufacturers will of course endeavor to throw the extra burden, will possibly be discouraged from buying these remedies, owing to the greatly increased price. Recently, the newly elected *Reichsrat* (council of the empire), which controls the interpretation of the aforementioned *Umsatzsteuergesetz*, has endeavored to define the term Geheimmittel (secret remedy, proprietary), concerning which there has been so much discussion, during the last few years, by jurists and other experts. According to the final decision of the federal council, *Geheimmittel* (secret remedies) are substances or preparations that are to be used for the prevention, cure or relief of diseases, affections or bodily injuries of all kinds; for increasing or diminishing bodily performances, or for the furtherance or easement of childbirth in man or animals, when (1) the ingredients, with respect to kind and quantity, are concealed from the knowledge of the purchaser; (2) the remedies in the prescribed and usual application are likely to prove deleterious to health, especially in that they keep the patient or subject from using proper remedies or securing medical assistance, or (3) the remedies serve to deceive or defraud, owing to the method by which they are advertised. Such substances and preparations as are listed or described in the pharmacopeia of the German empire and are offered for sale under the name by which they are known in said codex; likewise all remedies that are generally recognized by medical science and practice as therapeutic agents, are not to be regarded as *Geheimmittel* (secret remedies). The commission that makes up the list of taxable proprietaries must govern itself by this definition. Attached to this commission, besides the regular officials, is one representative each from the Deutsche Aerztevereinbund, the Deutsche Apothekerverein, the Deutsche Drogistenverein and the wholesale chemical industry. As compared with these official measures against the nostrum evil, the regulations adopted by the medical profession itself are inadequate and need to be revised and further developed.

Marriages

Earl Macbeth Watson of Canada to Miss Zoë Eileen Addy of Sheffield, England, August 1, at Sheffield.

Edwin J. Schneller, Prairie du Sac, Wis., to Miss Hazel Snuff of Berrien Springs, Mich., September 16.

Samuel John House, Nashville, Tenn., to Miss Mary Goodell Ingals of Chicago, September 29.

Robert Porch Sturr, Haddon Heights, N. J., to Margaret Tullidge of Philadelphia, September 20.

Martin C. Bergheim, Hawley, Minn., to Miss Mildred M. Engquist of Minneapolis, August 13.

John Andrew Saarl, Portland, Ore., to Miss Frances Cook of Terre Haute, Ind., September 27.

Angelo Caldarone to Miss Elvira Laura DeCesare, both of Providence, R. I., recently.

Frank E. Ellison to Miss Edith C. Smith, both of Monticello, Minn., September 1.

Harvey L. Van Pelt to Miss Abigail H. Sutphen, both of Ithaca, N. Y., July 27.

Clarence Martin to Miss Genevieve East, both of St. Louis, September 23.

Charles Anton Freund to Miss Helen Mary Browne, both of Chicago, July 1.

John R. Paul, Philadelphia, to Miss Leita Harlan of Baltimore, September 30.

Cyril K. Valade to Miss Marion I. Anderson, both of Detroit, October 5.

John H. Norris to Mrs. Hazel Morris, both of Fostoria, Ohio, recently.

Deaths

Lucius Fayette Clark Garvin, Lonsdale, R. I.; Medical School of Harvard University, Boston, 1867; died suddenly in his office, October 2, from heart disease. Dr. Garvin was born in Knoxville, Tenn., in 1841, and received his A.B. degree from Amherst College in 1862. He served throughout the Civil War. In 1864 he located in Rhode Island, and in 1883 was elected a member of the state legislature. In 1902 he was elected governor of Rhode Island and served two terms. Dr. Garvin served two terms as state senator and sixteen terms in the lower house. He served eighteen terms in the General Court of Rhode Island and for twelve years was medical examiner of Cumberland. He was elected to the senate again in 1920 and was in office at the time of his death. For many years Dr. Garvin was a member of the Rhode Island Medical Society.

Frank Fremont-Smith ✱ Boston; University of Pennsylvania, Philadelphia, 1883; member of the Maine Medical Association; member of the Obstetrical and Gynecological Society of Washington, D. C.; formerly associate professor of pediatrics, George Washington University, Washington, D. C.; at one time physician to the Hospital for Foundlings and the Garfield Hospital, Washington, D. C.; aged 66; was found dead in the bathtub, with his throat cut, September 29, at his summer home in Bar Harbor, Maine.

Francis M. Gunnell ✱ Rear Admiral, M. C., U. S. Navy (retired), Washington, D. C.; Medical Department of Columbian College, Washington, 1846; Civil War veteran; at one time president of the board of medical examiners at Washington; served as surgeon general of the navy, 1884-1888, and retired as medical director in 1889; delegate to the International Medical Congress in 1876; for several years represented the navy at meetings of the American Medical Association; died recently, aged 94.

Arthur Bray Oechsli, Walla Walla, Wash.; University Medical College of Kansas City, Mo., 1908; head of the roentgen-ray department of the U. S. Veterans' Bureau Hospital at Walla Walla; suffered a compound fracture of the skull and internal injuries in an automobile accident on the Tucanon, September 9, and died, September 12, aged 39, at the hospital at Fort Walla Walla.

Henry P. Merrill, Jr. ✱ Lieut., M. C., U. S. Navy, Washington, D. C.; Cornell University Medical College, New York, 1920; member of the Maine Medical Association; served in the Surgeon-General's office at Washington; recently assigned to the Asiatic squadron with sailing orders, October 17; veteran of the World War; died, September 25, aged 47, at Brooklyn Navy Yard Hospital.

George R. Andreas, Wilkes-Barre, Pa.; Jefferson Medical College, Philadelphia, 1892; member of the Medical Society of the State of Pennsylvania; chief medical examiner for the city schools; at one time on the staffs of the Nesbitt West Side Hospital and the Mercy Hospital; died, September 19, aged 54, from cerebral hemorrhage.

Neill Archie Thompson, Lumberton, N. C.; Maryland Medical College, Baltimore, 1905; member of the Medical Society of the State of North Carolina; medical superintendent of the Thompson Hospital, Lumberton; aged 52; died, September 29, in a hospital at Fayetteville, from injuries received when he was knocked down and run over by an automobile.

Frank William Anderson ✱ Rochester, Minn.; Medical School of Harvard University, Boston, 1918; member of the Massachusetts Medical Society; associate in the section on radium and roentgen-ray therapy of the Mayo Clinic, Rochester, since October 1920; died, September 29, aged 37, at the home of his parents in Roslindale, Mass.

Nathaniel Royal Perkins, Boston; Boston University School of Medicine, Boston, 1876; formerly president of the Massachusetts Homeopathic Medical Society; member and for many years assistant secretary of the board of registration; at one time member of the state legislature; aged 75; dropped dead in front of his home, September 22.

Frank Randolph, Elkhart, Ind.; University of Michigan, Ann Arbor, 1892; member of the Indiana State Medical Association; aged 57; died, September 24, at the Hostettler Hospital, LaGrange, from injuries received when the automobile in which he was driving was struck by a freight train.

James Warren Ingalls ✱ Brooklyn; Medical Department of Columbia College, New York, 1884; member of the Amer-

ican Ophthalmological Society and the American Pathological Society; ophthalmologist to the Wyckoff Heights Hospital and the Bushwick Dispensary; died, September 27, aged 72, from angina pectoris.

Daniel Walker Figgins, Ketchikan, Alaska; College of Physicians and Surgeons, Keokuk, Iowa, 1877; served in the Philippine Islands, with the rank of major, during the Spanish-American War; for many years a railroad surgeon; died, September 15, aged 66, at San Diego, Calif.

Daniel L. McNamara, Utica, N. Y.; New York University Medical College, 1882; formerly a railroad telegrapher; at one time medical superintendent of the Batavia Institution for the Blind; for several years police surgeon of Utica; died, September 22, aged 67, from pneumonia.

James Craig, Columbus, Mont.; Medical School of Maine (Bowdoin College), Portland, 1876; member of the Medical Association of Montana; formerly mayor of Columbus and at one time county health officer; died, September 15, aged 72, following a long illness.

John Henry Parker, Corbin, Ky.; University of Louisville Medical Department, 1890; member of the Kentucky State Medical Association; aged 60; was instantly killed, September 25, when the automobile in which he was driving was struck by a railroad train.

Charles Woodbury Banta ✱ Buffalo; University of Buffalo Department of Medicine, 1901; formerly gynecologist to the Buffalo Hospital of the Sisters of Charity, and at one time obstetrician to St. Mary's Maternity Hospital, Buffalo; died, September 22, aged 44.

Frank Raymond Mehler, New London, Iowa; Keokuk Medical College, Keokuk, Iowa, 1900; member of the Iowa State Medical Society, served in France with the M. C., U. S. Army, during the World War; died, September 24, aged 48, following a long illness.

Andrew John Forman, Auburn, N. Y.; New York University Medical College, New York, 1897; member of the Medical Society of the State of New York; coroner of Cayuga County for twelve years; died, September 24, aged 49, from heart disease.

Jennie Trish Topinka Cohn ✱ Chicago; Hahnemann Medical College and Hospital of Chicago, 1895; at one time research worker for the department of health; died, October 3, aged 56, at the North Chicago Hospital, from carcinoma of the breast.

Rolla Harrison Henry ✱ St. Louis; St. Louis University School of Medicine, St. Louis, 1908; superintendent of the St. Louis City Hospital, No. 1; aged 47; was killed instantly, September 14, when he fell from the top story of the City Hospital.

William Wilson Silvester, Jr., Norfolk, Va.; University of Pennsylvania School of Medicine, Philadelphia, 1913; member of the Medical Society of Virginia; aged 33; died at a hospital in Richmond, September 4, following a short illness.

Samuel Silberstein, Passaic, N. J.; Baltimore University School of Medicine, 1900; one of the founders and first president of the Barnert Memorial Hospital, Paterson, N. J.; died, September 21, aged 42, from cerebral hemorrhage.

Sarah Hatton McAulay, Monterey, Calif.; Hahnemann Medical College of the Pacific, San Francisco, 1904; died, September 17, aged 40, at the Monterey Hospital, from injuries received in an automobile accident.

Russell Penrose Heilman, Emporium, Pa.; Jefferson Medical College, Philadelphia, 1876; member of the Medical Society of the State of Pennsylvania; aged 71; was killed in an automobile accident, September 10.

George W. Ira, Lynch, Neb.; St. Louis College of Physicians and Surgeons, St. Louis, 1888; for twenty-six years in the Indian Service; author of "Medical Experience Among the Indians"; died, August 24, aged 80.

Frank Leslie Hughson, Breckenridge, Texas; Ensworth Medical College, St. Joseph, 1904; member of the State Medical Association of Texas; died, September 15, aged 50, from septicemia following coccygeal abscess.

Robert Bruce Mullins, Broken Arrow, Okla.; Louisville Medical College, Louisville, Ky., 1882; for twelve years health officer and coroner of Dighton, Kan.; died, August 29, aged 62, at the Morningside Hospital, Tulsa.

John Keesee, Carbondale, Ill.; College of Physicians and Surgeons of Keokuk, Iowa, 1878; formerly member of the city council; aged 73; died, September 20, at the home of his son in Denver, from paralysis.

Philip S. Rieg ✱ Toledo, Ohio; Toledo Medical College, Toledo, Ohio, 1894; served in the Navy during the Spanish-American War; was found dead in bed, September 21, aged 56, from heart disease.

James Willis Kerley, Cordell, Okla.; University of Nashville Medical Department, 1900; member, and at one time secretary, of the Oklahoma State Medical Association; died, July 27, aged 51.

Murdoch Thomas McLean, North Sydney, N. S.; Dalhousie University Faculty of Medicine, Halifax, N. S., 1899; mayor of North Sydney; died recently, aged 49, from cerebral hemorrhage.

William N. Daniels, Mosinee, Wis.; Rush Medical College, Chicago, 1878; member of the State Medical Society of Wisconsin; Civil War veteran; died, September 17, aged 77, at Madison.

William C. Reece, Elvins, Mo.; Barnes Medical College, St. Louis, 1899; member of the Missouri State Medical Association; died, July 28, aged 55, from gastritis and uremia.

Edward Cabell Smith, Richmond, Va.; University of Virginia Department of Medicine, Charlottesville, 1881; was found dead in bed, September 16, aged 58, from heart disease.

Harry Milton Smith ✱ McKeesport, Pa.; Ohio Medical University, Columbus, Ohio, 1903; died, September 8, aged 49, at the McKeesport Hospital, from chronic nephritis.

Albert S. Gilbert, Florence, Ga.; Atlanta Medical College, Atlanta, Ga., 1889; died, September 16, at Eufaula, Ala., following an operation for appendicitis, aged 57.

Charles L. Scott, Hanford, Calif.; Keokuk Medical College, Keokuk, Iowa, 1898; Kings County health officer; died, September 4, aged 49, from diabetes mellitus.

Jacob Solovay, Chicago; Chicago College of Medicine and Surgery, 1917; member of the Illinois State Medical Society; died, October 3, aged 32, from pneumonia.

Joseph John Zak ✱ Chicago; Bennett Medical College, Chicago, 1915; specialized in pediatrics; died, October 1, aged 43, from retroperitoneal carcinoma.

Richard B. Bennett, Bangs, Texas; Tulane University of Louisiana School of Medicine, New Orleans, 1870; died, August 13, aged 75, from senility.

Franklin Lafayette Rownd, Pasadena, Calif.; Rush Medical College, Chicago, 1874; died suddenly, September 12, aged 71, in Kansas City.

Stanley M. Ward, Hampton, N. H.; Jefferson Medical College, Philadelphia, 1882; died, September 13, aged 63, following a long illness.

Levi Zimmermann, Lebanon, Pa.; Jefferson Medical College, Philadelphia, 1883; died, September 6, aged 66, from arteriosclerosis.

Robert A. McQueen, Rusk, Texas; Medical Department University of Tennessee, 1884; died recently, aged 75, at Marlin, Texas.

Merrell Monk, Athens, La.; University of Nashville Medical Department, 1897; died, August 1, aged 49, from cerebral hemorrhage.

George Albert Spaulding ✱ Avoca, Iowa; University of Iowa College of Medicine, Iowa City, 1888; died, August 2, aged 54.

Thomas Delass Bristol, Cleveland; College of Physicians and Surgeons of St. Joseph, Mo., 1882; died, September 13, aged 68.

William J. Joyce, Webb City, Mo.; Barnes Medical College, St. Louis, 1898; died, August 24, aged 66, from heart disease.

Cornelius F. Mills, Chicago; University of Michigan, Ann Arbor, 1871; died, October 1, aged 77, from cerebral hemorrhage.

Alfred H. Tucker, Whiterock, Mich. (licensed, Michigan, 1900); died, August 11, aged 79, from cirrhosis of the liver.

J. D. S. Fairey, Orangeburg, S. C.; Medical College of the State of South Carolina, 1884; died, September 13, aged 62.

Winfield Scott Marshall, Chicago; Medical College of Ohio, Cincinnati, 1872; died, October 4, aged 73, from heart disease.

Joseph K. Miles, Conroe, Texas (registered, in Texas, by the Act of 1907); aged 56, died recently, from nephritis.

Reuben R. Tidrick, Bringhurst, Ind.; Medical College of Ohio, Cincinnati, 1866; died, September 19, aged 81.

D. U. Hurst, Combs, Ark. (licensed, Arkansas, 1903); died, September 7, aged 74, from heart disease.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

THERAPEUTIC RESEARCH INTO THE CLINICAL FIELD OF YEAST PREPARATIONS

Report of the Council on Pharmacy and Chemistry

The Council has adopted the following report and has authorized its publication. W. A. PUCKNER, Secretary.

The Council, at its meeting of March, 1921, directed its Therapeutic Research Committee to determine the advisability of undertaking a clinical study of the usefulness in therapy of yeast preparations. Accordingly, the chairman of that committee drew up a provisional plan which proposed to utilize the easily observable phenomena of growth, appetite and laxative effects as cumulative indices of all action and to record these under a variety of normal and pathologic conditions. The plan was submitted to the members of the committee and to others, with a request that they express their views: first, as to whether such an investigation would be likely to justify the effort; second, as to the plan itself, and, third, as to those who should be asked to participate.

The responses indicated considerable interest in the subject. They were rather evenly divided as to the desirability of the investigation, and predominantly skeptical as to the probability of positive results. That is, most of the correspondents doubted the usefulness of yeast in clinical conditions; but about half thought that the question should be investigated in some such manner as was proposed in the plan. The others inclined to the opinion that the results would probably be inconclusive, at least to the advocates of yeast therapy; and that the trials should be begun, if at all, on a very restricted scale.

Since the plan was drafted, Prof. A. L. Daniels has reported experiments on babies and older children, with entirely negative or with unfavorable results. A. F. Hess also had previously published similar, negative data. Since persons of the actively growing age would be most likely to show improvement in growth, the Therapeutic Research Committee concluded not to extend the observations to other groups; nor did a repetition of the investigations of Daniels and Hess seem, to the committee, necessary. The chairman of the committee, therefore, recommended to the Council that the investigations along the lines proposed be not inaugurated, on the ground that, in the light of present knowledge, there does not seem to be a deficiency of growth vitamin under conditions existing in America, even when the growth demands are most active.

In advising against the proposed investigations of yeast preparations, the chairman of the committee pointed out that this does not entirely dispose of the question of yeast therapy, for several other fields of usefulness are hypothetically conceivable:

A. For individuals living on extraordinary diets of especially low vitamin content: The investigation of this field would need to await more knowledge as to the actual existence of such conditions. The correspondence indicates that no such group has been recognized in this country, with the possible exception of dietary faddists, in whom neurotic factors are likely to be inherent in such degree as to make them difficult subjects for study.

B. As a laxative: There is no doubt that living yeast does act as a laxative, and as such may be useful for subjects afflicted with habitual constipation and its progeny. This much may be granted *a priori;* and it does not seem worth while carrying the subject further at this time, since no plan has suggested itself by which to determine whether it should be preferred to other laxatives.

C. To increase resistance in some other manner: This is too indefinite to be considered seriously for clinical investigation, until the conditions in which it is supposed to act are more sharply defined, or until it is based on animal experiments.

The chairman reported that, as a result of the information obtained, he had come to these conclusions:

1. Apart from the occasional imported cases of beriberi, vitamin deficiency is not a recognized or diagnosable clinical entity in this country.

2. With ordinary diets, yeast does not have any effect on growth, even of babies and children.

3. The one effect of yeast that has been definitely established is the laxative effect. This may be useful in chronic constipation but no direct method is at present available for determining its advantages or disadvantages in comparison with other laxatives. Critical observations in the course of ordinary practice may perhaps furnish some hints at a future time, especially when objective observations are not so much hindered by the psychic influence of commercial propaganda.

For these reasons, the further investigation of the problematic usefulness of yeast in clinical conditions would not be worth the effort and expense.

The report of the Therapeutic Research Committee and the replies to the committee's inquiries were submitted to the Council.

At its meeting in March, 1922, the Council considered the report of its Therapeutic Research Committee and agreed to the recommendation that the plans for the investigation of yeast preparations be abandoned for the present. The Council directed that the committee's report and the replies which had been received be submitted to those who had previously advised the Council in this matter, with the inquiry whether, in their opinions, the plans should be continued or abandoned. The Council directed that the replies be referred to the committee responsible for the yeast preparations proposed for admission to New and Nonofficial Remedies, with instructions to make final recommendations to the Council.

The replies received were, in general, against a clinical study of yeast preparations under the auspices of the Therapeutic Research Committee of the Council on Pharmacy and Chemistry. The committee therefore, recommended that the Council's decision to abandon, for the present, the plans for the investigations of yeast preparations be allowed to stand and that, as a matter of record, this report be authorized for publication. The Council adopted the recommendations and extended a vote of appreciation to those who had aided in the consideration of the important questions involved.

Correspondence

THIRD INTERNATIONAL CONGRESS ON THE HISTORY OF MEDICINE

To the Editor:—The third international congress on the history of medicine was held at the Royal Society of Medicine in London, July 17 to 22, under the honorary presidency of Sir Norman Moore and the acting presidency of Dr. Charles Singer, two of the leading medical historians of the English-speaking world. Distinguished representatives from every country of Europe, except Germany, Austria, Russia and one or two of the Balkan states, attended the scientific meetings. At the Royal College of Physicians, its president, Sir Humphry Rolleston, gave a most entertaining discourse on the history of the institution, and its splendid historical library and portrait gallery of distinguished members was exhibited.

The scientific program was chiefly devoted to medieval epidemics and to the history of anatomy. In the former topic, important papers were given by Tricot-Royer, a former president of the association, Professor Simpson, Wickersheimer, Mrs. Singer and others. The subjects of the anatomic papers, too numerous to mention, ranged from such general topics as "Beginnings of Western Anatomy," "Early Anatomic Instruction in Edinburgh" and "Beginnings of Anatomical Teaching in the United States" through individual consideration of Galen, Leonardo da Vinci, Vesalius, Des Cartes and others to a valuable group of papers on veterinary anatomy.

The International Society of the History of Medicine was founded at Paris in 1921, with the object of studying all subjects pertaining to the history of the biologic and medical sciences, and of organizing congresses on medical history. Three such congresses have already been held, and hence-

forth will be held triennially, the next being at Geneva in 1925. At this year's congress, Great Britain was well represented by Sir Norman Moore, Sir d'Arcy Power, Dr. and Mrs. Charles Singer, Sir James Purves Stewart, E. T. Withington, W. Wright, F. J. Poynton, W. G. Spencer, J. D. Comrie, C. J. S. Thompson, Major Gen. Sir F. Smith and others; France by Laignel-Lavastine, Fosseyeux, Villaret, Jeanselme, Wickersheimer and others (Menetrier unfortunately could not attend). Capparoni and Castiglioni from Italy, Tricot-Royer from Belgium, de Lint from Holland and Sigerist (unofficially) from Switzerland were other prominent members. The United States was represented by Drs. B. I. Hart of Bridgeport, Conn.; E. B. Krumbhaar of Philadelphia, and Victor Robinson of New York. Dr. Fielding H. Garrison, the official delegate, was compelled to be absent, having been ordered to the Philippines. It is hoped that before the next congress, a national section (as called for in the regulations of the international society) will be organized and firmly established in this country.

E. B. KRUMBHAAR, M.D., Philadelphia.

"A NEW TYPE SIGMOIDOSCOPE"

To the Editor:—In THE JOURNAL, September 30, Lyon and Bartel describe a new type sigmoidoscope. They object to the seven-eighths inch diameter of the Tuttle and Lynch instruments as being too large, and could get only a short Axtell with a smaller diameter. Evidently they are not acquainted with Yeoman's sigmoidoscope, made by Wappler of New York. I have and now use a Yeoman's instrument with a barrel of five-eighths inch diameter, and also one with a three-eighths inch diameter for "nervous patients" and children. The light is placed at the butt of the instrument and is of a substantial type, and a lens window which does not blow off with inflation is also attached. I have found both light and window so satisfactory under all conditions that I have had it attached to both a proctoscope and an anoscope, the latter of the Hirschman model.

HARRY GOLDMAN, M.D., New York.

COLLECTING PHYSICIANS' ACCOUNTS

To the Editor:—I have read with interest the editorial comment on collection agencies, in THE JOURNAL, September 23. My experience, covering the last fifteen years, with collection agencies is that it is time and money wasted to have anything to do with them. The question of what to do with past due accounts had been agitating the physicians of this community. Finally a meeting of all the physicians and dentists was called to discuss ways and means to get our outstanding accounts in more businesslike shape. After discussion, a committee was formed to draw up an agreement for a working organization. This brought into being the Physicians and Dentists Clinic Association of Cache Valley.

We secured the service of a man as auditor who had had several years of experience for banks and business houses in this class of work. The members of the association put into his hands accounts amounting to about $20,000 and added to them month by month as accounts became from sixty to ninety days old.

We have been under way now four months, and results have been good. It has had a good moral effect. It has brought the professional men together as nothing else could, and has brought to time that class who never intend to pay a physician, going from one to another without paying any. Up to the present several thousand dollars in cash has been collected for the association, with several thousand dollars' worth of accounts put in note form. Our business agent follows up the accounts and notes when due, and insists on payment or renewals, as a bank or a business house would do. Objections on the part of the public have been remarkably few, and no one, so far as we can learn, has suffered in any way from the adoption of a more businesslike method in the handling of their accounts.

A complete set of books is kept in the secretary-treasurer's office. Every account statement, receipt and check is made out in duplicate form so that a double check can be made on every transaction. In a system like this, the expenses of the first few months will be large, but after several months they should keep getting less and less, until the cost of collection should be down to from 10 to 15 per cent. Even if it were 25 or 30 per cent., it would be an improvement over the average loss of from 40 to 60 per cent. on old accounts.

For a system like this there should be in the organization not less than ten active men, and from that up to as many as one good competent man could handle by devoting all his time. To be successful, all the men must be united behind the business agent and give unanimous support.

G. W. STATES, M.D., Preston, Idaho.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PRECIPITIN TEST FOR MENINGITIS

To the Editor:—Please tell us whether or not the precipitin test for meningitis is reliable. The test is given in many textbooks, telling us to take the clear spinal fluid and add a small amount of antimeningococcus serum and incubate five or six hours. Should this incubation be carried on at body temperature or at 56 C.? We have tried the test in two supposedly positive cases—cases in which meningococcus-like organisms were found, but in which the patients were not very sick or rigid. Incubation was done at 56 C. for five hours. Results were negative. Can we feel quite positive that infection was not a true meningococcus infection, or is the test unreliable? If the test was not performed correctly, please tell us the correct method.

———, Wisconsin.

ANSWER.—Dopter, the French authority on meningococcus infection, in his recent book (L'Infection méningococcique, 1921) says that on adding from 1 to 5 drops of antimeningococcus serum to about 5 drops of cerebrospinal fluid, first cleared thoroughly by centrifugation, and then incubating at 37 or preferably 55 C. for five or six hours, an opalescence may develop if the meningitis is due to the meningococcus. The control tube, incubated in the same way, should contain the same cerebrospinal fluid but no antimeningococcus serum, and this fluid should remain clear. Dopter says that sometimes the fluid in the control tube also becomes opalescent, and that normal horse serum may give opalescence when used in the place of antimeningococcus serum; furthermore, that the reaction sometimes occurs in cases of meningitis due to other organisms than the meningococcus, such as the pneumococcus and the tubercle bacillus; and also that the reaction may fail to develop even when the meningococcus is the pathogenic agent. These observations self-evidently limit greatly the value of the precipitin reaction in meningococcus meningitis. It should be noted, however, that it has been found possible by means of this reaction to determine to what group the particular meningococcus in a given case belonged, showing that under certain conditions the test may have diagnostic specificness.

Basal Metabolism.—The heat production per square meter of surface, using the Du Bois method, is 39.7 calories per hour, provided the individual is resting and is "normal," and provided the experiment is carried out before the administration of food in the morning (that is, after he has fasted from twelve to fourteen hours). This is the so-called "basal metabolism," and constitutes the unit of reference whereby we can measure what are the deviations from the normal. Harrow: Glands in Health and Disease, E. P. Dutton & Co., 1922.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 14-15. Sec., Reg. Bd., Dr. G. W. Walker, Fayetteville; Sec., Eclec Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith; Sec., Homeo. Bd., Dr. George M. Love, Rogers.

CALIFORNIA: Sacramento, Oct. 16-19. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

CONNECTICUT: Hartford, Nov. 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, Nov. 14-15. Sec., Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport; Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

IOWA: Des Moines, Nov. 1-3. Sec., Dr. Rodney P. Fagen, State House, Des Moines.

NEVADA: Carson City, Nov. 6. Sec., Dr. Simeon L. Lee, Carson City.

NEW JERSEY: Trenton, Oct. 17-18. Sec., Dr. Alexander MacAlister, State House, Trenton.

TEXAS: Waco, Nov. 28-30. Sec., Dr. T. J. Crowe, Dallas County Bank Bldg., Dallas.

Oklahoma July Examination

Dr. J. M. Byrum, secretary, Oklahoma State Board of Medical Examiners, reports the written examination, held at Oklahoma City, July 11-12, 1922. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 13 candidates examined, 12 passed and 1 failed. Three candidates were granted reregistration licenses, and one candidate received a duplicate license. Nine candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Tulane University		(1922)	87
Harvard University		(1921)	90
Kansas City College of Medicine and Surgery		(1921)	78
Washington University		(1922)	90
Eclectic Medical College		(1922)	83
Ohio State University Coll. of Homeopathic Medicine		(1921)	78
University of Oklahoma		(1922) 82, 83, 84, 85,	85, 85
	FAILED		
Meharry Medical College		(1921)	71

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University		(1906)	Kansas
Physio-Medical College of Indiana		(1906)	Indiana
Iowa College of Physicians and Surgeons		(1897)	Iowa
Kansas City Medical College		(1895)	New Mexico
Marion Sims College of Medicine		(1903)	Nebraska
University Medical College of Kansas City		(1911)	Kansas
John A. Creighton Medical College		(1912)	Nebraska
University of Tennessee		(1890), (1914)	Tennessee

Utah July Examination

Mr. J. T. Hammond, director, Department of Registration of Utah, reports the written examination held at Salt Lake City, July 5-7, 1922. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 7 candidates examined, 5 passed and 2 failed. Four candidates were licensed by reciprocity. Three candidates were licensed on government credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Stanford University		(1922)	87
Jefferson Medical College		(1921)	81.2
University of Pennsylvania		(1920) 85.4, 86.4,	(1922) 82.8
	FAILED		
St. Louis College of Physicians and Surgeons		(1918)	57.6
Creighton University		(1921)	72.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois		(1922)	Illinois
College of Physicians and Surgeons, Baltimore		(1915)	W. Virginia
Washington University		(1921)	Missouri
University and Bellevue Hospital Medical College		(1920)	New York

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Chicago College of Medicine and Surgery		(1917)	U. S. Navy
Barnes Medical College		(1896)	U. S. Army
University Medical College of Kansas City		(1903)	U. S. Army

West Virginia July Examination

Dr. W. T. Henshaw, secretary, West Virginia Public Health Council, reports the oral, written and practical examination held at Martinsburg, July 11, 1922. The examination covered 11 subjects and included 132 questions. An average of 80 per cent. was required to pass. Of the 29 candidates examined, 27, including 1 osteopath and 2 chiropodists, passed, and 2 candidates failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1922)	89
State University of Iowa College of Medicine		(1920)	80
University of Maryland		(1921) 88, (1922)	91, 93
Harvard University		(1920)	88
Ohio State University College of Medicine		(1922)	90
University of Cincinnati College of Medicine		(1921) 86, 88, (1922) 88, 88	90, 93,
Jefferson Medical College		(1921) 87, 89, 89, (1922) 87, 88, 91	91, 93,
University of Pennsylvania		(1920)	87
University of Virginia		(1921)	89
National University, Athens		(1921)*	80
Osteopath			91
	FAILED		
Chicago Medical School		(1920)	†
St. Louis College of Physicians & Surgeons		(1922)	73

Dr. Henshaw also reports that from January, 1922, to July, 1922, twenty-five candidates were licensed by reciprocity. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Emory University		(1920)	Georgia
University of Louisville Medical Department		(1907) (1910)	Kentucky Indiana
Tulane University		(1917)	Texas
College of Physicians and Surgeons, Baltimore		(1903)	New Jersey
Johns Hopkins University		(1914)	Hawaii
Univ. of Maryland		(1907) Louisiana, (1908) (1916)	(1919) Maryland
University of Michigan Medical School		(1917)	Ohio
Cornell University		(1910)	New York
Medical College of Ohio		(1896)	Ohio
Western Reserve University		(1917)	Ohio
Hahnemann Med. Coll. and Hosp. of Philadelphia		(1902)	Penna.
Jefferson Medical College		(1913)	Michigan
Medico-Chirurgical College of Philadelphia		(1911)	Penna.
Medical College of Virginia		(1915), (1916, 2),	(1917) Virginia
Meharry Medical College		(1917)	Georgia
University of Nashville		(1910)	Indiana
Vanderbilt University		(1914)	Alabama

* Graduation not verified.
† No grade given.

Book Notices

MALADIES DU CERVELET ET DE L'ISTHME DE L'ENCÉPHALE. (Pédoncule, Protubérance, Bulbe). Par Henri Claude, Professeur a la Faculté de Médecine de Paris, and Lévy-Valensi, Ancien Chef de Clinique de la Faculté de Médecine de Paris. Paper. Price, 35 francs. Pp. 439, with 104 illustrations. Paris: J.-B. Baillière et Fils, 1922.

This, the thirty-second part of a large work on internal medicine, covers the subject excellently, and is up to date. Those who have had trouble in correlating the signs of cerebellar disease and in fully grasping the Bárány tests will find the numerous diagrams helpful. The volume includes consideration not only of the inflammatory and vascular lesions of the cerebellum and brain stem but also of tumors of this region, including tumors of the cerebellopontile angle, and epidemic (lethargic) encephalitis. The discussion of symptomatology is especially full and detailed, and the literature is given more extensively than is usual in a work of this kind; but in neither are the important and determinative sufficiently separated from the subsidiary and nonessential. The illustrations are excellent and nearly all really illustrate something. As in most French works, there is no index: only a table of contents.

MANAGEMENT OF THE SICK INFANT. By Langley Porter, B.S., M.D., M.R.C.S., Professor of Clinical Pediatrics, University of California Medical School, and William E. Carter, M.D., Assistant in Pediatrics and Chief of Out Patient Department, University of California Medical School. Cloth. Price, $7.50. Pp. 654, with 54 illustrations. St. Louis: C. V. Mosby Company, 1922.

The authors have limited the scope of their work to the needs of the sick infant. They describe minutely the dietetic and therapeutic measures indicated in the many minor and major pathologic conditions distinctive of infancy. The book is written in three parts. Part One, which is divided into ten chapters, discusses the most important symptoms encountered, inclusive of their treatment, as vomiting, diarrhea, constipation, hemorrhage, fever, cough, pain and tenderness

convulsions and syncopes. In this section the most common nutritional disturbances and their management are reviewed. Part Two, in ten chapters, covers the more frequent malformations, infections and other disturbances of the respiratory and digestive tracts, the diseases of the heart and circulation, and those of the blood and the lymphatic, nervous, genitourinary and osseous systems. The final chapters are devoted to the diseases of the skin, the glands of internal secretion, and chronic and acute infections. The general and specific measures indicated in their care are described in detail. In Part Three, the application of the special therapeutic measures previously recommended is described in great detail, such as intravenous, subcutaneous, intramuscular and intraperitoneal injections, intraspinal serum injection, gavage, rectal feeding and heliotherapy. This part of the book also covers the description and indications for use of important and established measures for diagnosis of the diseases of infancy, such as determination of coagulation time, lumbar and ventricular puncture and puncture of the cisterna magna, the Schick test, flouroscopy, and the taking and interpretation of roentgenograms. One of the later chapters is devoted to drug therapy, with illustrated combinations which may be recommended in the treatment of the commoner diseases and those for which there is a known specific therapy. The book closes with a chapter on the treatment of acute poisoning, with an enumeration of the antidotes and a detailed description of the indicated physical measures. The authors have successfully arranged their material in a practical and accessible manner. The description of the various methods is concise and comprehensive. The volume is well illustrated throughout, and will prove a valuable and practical addition to the library of physicians interested in the care of children, and to the hospital library as well.

THE PRINCIPLES OF ELECTROTHERAPY AND THEIR PRACTICAL APPLICATION. By W. J. Turrell, M.A., D.M., B.Ch., Consulting Physician, Oxford County and City Mental Hospital. Cloth. Price, $3.85. Pp. 276, with 29 illustrations. New York: Oxford University Press, 1922.

The author has condensed in this small volume more practical facts than are usually found in such works. Part I deals with the therapeutic action of current electricity, including the constant current, interrupted currents of low and of high frequency, and currents derived from the static machine. When technical and mathematical subjects are referred to, the text is well illustrated by diagrams and formulas. Part II deals with the therapeutic action of radiant energy, including radiant heat and light, ultraviolet radiation and roentgen rays. The Wintz method of treating malignant growths is gone into in some detail. Parts III and IV take up electrodiagnosis and the application and mode of action of electricity in peripheral nerve lesions and in nervous and other diseases. The chapter on peripheral nerve lesions is full of interest, and brings out the newer methods of treatment and diagnosis developed during the late war. Taken as a whole, this is one of the best textbooks on the subject.

A TREATISE ON GLAUCOMA. By Robert Henry Elliot, M.D., B.S., Sc.D., Lecturer in Ophthalmology, London School of Tropical Medicine. Second edition. Cloth. Price, $8. Pp. 656, with 213 illustrations. New York: Oxford University Press, 1922.

This edition appears in an elaborated form, entitled a treatise, and a veritable treatise it is. The entire subject of glaucoma—"a convenient clinical label for a large group of pathologic conditions, the distinctive feature common to all of which is a rise in the intra-ocular pressure"—is covered in a manner that cannot fail to elicit praise from any reader, no matter what divergent opinions he may hold. No thinking ophthalmologist will agree with Elliot in all of the details (otherwise he would not be a thinking ophthalmologist), but both sides of mooted questions are discussed in all fairness, and from these and his vast clinical experience, the author has drawn the conclusions on which he pins his faith. It would be well if the axioms expressed on page 140 could be emphasized: "(*a*) A mydriatic should never be used without first ascertaining the tension of the eye and the condition of the optic disk; and (*b*) no doubtful patient should be allowed to leave the surgeon's care until miosis has been established." The question of diagnosis occupies a full two hundred pages, about one third of the book, and is handled in a clear, convincing manner. In these pages, there are few sentences that can be questioned. Treatment fills another two hundred odd pages, but here the individual experience and belief of the ophthalmic reader may lead to variance, particularly as to the efficacy of operative results. Taken by and large, however, the book is a real encyclopedia of glaucoma, well written, well printed and well illustrated. The author has not allowed his individuality to dominate the pages, even in those devoted to the clear discussion of the operation that has done so much to make his name a standby in ophthalmic circles.

LEITFADEN DER MEDIZINISCH-KLINISCHEN PROPÄDEUTIK. Von Dr. F. Külbs, Professor an der Universität Köln. Third edition. Paper. Price, 108 marks. Pp. 178, with 87 illustrations. Berlin: Julius Springer, 1922.

This little book in German, covering the clinical methods of examination, is a most useful handbook for medical students or for practitioners who desire to review this important subject. It is particularly to be recommended for its excellent schematic drawings.

Medicolegal

Malpractice Provable Without Expert Testimony

(Cornwell v. Sleicher et al. (Wash.), 205 Pac. R. 1059)

The Supreme Court of Washington, in reversing a judgment of nonsuit and remanding the case for a new trial, says that the plaintiff suffered an oblique fracture of the radius of his right arm, about midway between the elbow and the wrist. The defendant Sleicher took two roentgenograms of the arm from different positions, and, thereby discovering the nature of the fracture, sought to reduce it by extension and counter extension, after which he put on the arm a wire splint, the swollen condition of the arm forbidding placing it in a permanent cast. Another roentgenogram was then taken. The defendant, being satisfied that the bones were in place, instructed the plaintiff as to the manner of carrying the arm, and told him to return in ten days to have a permanent cast put on. When the plaintiff returned, as directed, the defendant, after examining the fracture, said that the bones were not quite together, so he would slip them, which he sought to do by pressure. The plaintiff then called attention to a protuberance at the wrist. The defendant remarked that the bone would have to be slipped a little, and proceeded to manipulate it, after which a catch or snap was heard and the protuberance disappeared. The arm was then placed in a plaster cast, and the plaintiff was told to return in three weeks. When he returned, the defendant removed the cast, examined the arm, and pronounced it satisfactorily healed. The plaintiff called attention to the fact that the arm was crooked, but was told that it was all right. Soon aferward, the arm became very painful, and the plaintiff found a lump underneath the fracture, which he described by saying, "It seemed like I could hook my thumb right under the end of the bone sticking out." Subsequently, the plaintiff consulted another physician, who took roentgenograms of the arm, and treated it by cutting into it and chiseling off a protruding end of the fractured bone. He described the arm as showing a slight angle and a very little shortening. He also testified that there was some loss of motion. Such, in effect, was the evidence which the jury would have been entitled to believe had the case been submitted to them, and the court holds that it was error to withdraw the question of the defendant's liability from them.

It was urged that, while lay witnesses testified as to what was done by the defendant, and to the result, no witness testified that that result was caused by any improper or unskilful treatment. But with reference to the proposition that there must be evidence by a person skilled in the science of surgery that the treatment of a particular injury is negligent and unskilful, before a court or jury can pronounce it so, this court has heretofore dissented, and is not now in accord. There must be, in the nature of things, many instances in which the facts alone prove the negligence, and

in which it is unnecessary to have the opinions of persons skilled in the particular science to show unskilful and negligent treatment. It seems to the court that this was an instance of that sort. Both the defendant and the other surgeon testifying said that the fracture was without complications, and one easy of reduction. The roentgenograms produced by the different surgeons showed that the bones knitted much in the same position in which they were prior to any attempt at reduction. This, taken with the evidence of the lay witnesses to the effect that there was no misuse of the arm between the time the fracture was reduced and the patient was discharged as cured, that at the time of the discharge the arm was crooked and shortened, that there was a lump in the region of the fracture palpable to the touch and visible to the eye, that there was a loss of flexion, and almost constant pain in the arm, and that a second operation was necessary to make it even passably usable, was sufficient to make the question whether the defendant had brought to the treatment of the arm that degree of care and skill usually brought to the treatment of similar fractures by surgeons practicing in his locality one of fact for the jury rather than one of law for the court. Moreover, the second surgeon based his opinion that the treatment was skilful on a hypothetical question that assumed that the fracture was reduced and the fractured bones placed in apposition, and that they were so at the time the permanent cast was put on the arm; while he expressed the opinion, reluctantly, it may be conceded, that, if the opposite of these conditions were the fact, the operation was not skilful.

Must Provide Emergency Treatment for Poor Children

(Caton et al. v. Board of Commissioners (Kan.), 205 Pac. R. 341)

The Supreme Court of Kansas holds that, notwithstanding the provisions made for surgical operations and hospital treatment, at the state hospital conducted by the regents of the university, of the children of indigent persons, afflicted with certain deformities and maladies, it is still the duty of the overseer of the poor, in cases of emergency, to provide promptly proper medical or surgical treatment for children of the poor when the lack of emergency relief is likely to result in the loss of life or other serious consequence. The court says that this case involved the question whether a county is liable for the cost of an emergency operation performed on an indigent person at the instance of the overseer of the poor, without the order or consent of the commissioners of the county. It appeared that the mayor of the city of Osborne, a physician, and the overseer of the poor for the city, found a child of an indigent person suffering from a mastoid ailment, and that to save her life an immediate operation was necessary. There was no poorhouse or hospital in the county, nor were there any surgeons capable of performing such an operation, and the overseer of the poor therefore sent her to Concordia, where a successful operation was performed. When the bill for the operation and hospital care was presented to the county commissioners, it was rejected. This action was then brought, and it was held that the county was not liable; which judgment is now reversed.

While the act of 1911 provides for surgical operations on and hospital treatment for children of the poor, afflicted with deformities or maladies that may be cured by such operations and treatment, it was evidently intended to apply to afflictions which progress slowly or are of a chronic character which can without great risk await the calling together of the board of county commissioners and transportation of the sufferers hundreds of miles across the state to the university hospital. Emergency cases, such as the one under consideration, were manifestly not intended to be included in that act; nor was it intended that relief should be withheld by the overseer of the poor until action was taken by the board of county commissioners. When an overseer of the poor finds a poor person in need of care, it is his duty to furnish him prompt and proper relief. If the afflicted one is seized with a malady or has sustained an injury likely to terminate in death unless immediate medical or surgical attention is given, he would be grossly negligent if he did not promptly furnish it. In any event, the duties imposed on the overseer would not end until charge of the afflicted one had been taken by the board of county commissioners. Even if the child of an indigent person was suffering from a deformity or malady such as would bring it within the act of 1911, and while waiting the action of the board of commissioners was seized with appendicitis or diphtheria, or had a mastoid attack such as that with which this child was suffering and which was likely to end in death if an operation was not immediately performed or special medical treatment given, it would be a gross dereliction of duty on the part of the overseer if he did not promptly provide for such an emergency and furnish proper care and relief.

Liability for False Imprisonment for Insanity

(Boesch v. Kick (N. J.), 116 Atl. R. 796)

The Supreme Court of New Jersey, in permitting a verdict for $8,500 damages to stand against the defendant, says that two other defendants were the physicians who signed the certificates on which the order was made that committed the plaintiff to a hospital for the insane, but the verdict for damages was against this one defendant only. He testified that he had known the plaintiff for ten years; that from 1915 to 1917 he had seen her probably four or five hundred times; that she would meet him every morning at the railroad station to talk over her troubles, and wrote him letters for three years, about four a week; that she talked about her husband, her business, her life, her marriage, her children, everything that it was possible for a woman to bring up; that she considered him her best friend; that he gave her loans; that she had a delusion that her husband was insane; that her husband said, "It's time to put her away." The defendant arranged the meeting at which the plaintiff was examined by the physicians. He induced her to go with him in an automobile to the asylum under the pretense that they were going to make arrangements for the commitment of her husband, and then he left her there. Subsequently, after several days, at the request of her husband, she was permitted to leave, but was not discharged. Nowhere in the record was there any testimony or even suggestion that to permit her to be at liberty would imperil her own safety or that of the public, or that she might become dangerous. The defendant's own evidence justified the verdict found by the jury. When one has restrained a member of society of his liberty, who may be deranged in his mind, he must show, in order to justify such conduct, when charged therewith as a wrongful act, not only that the person was insane at the time, but also that to permit him to go at large imperiled his own safety or the safety of the public. The defendant assumes the burden of showing that fact and the imminent necessity of the restraint. He must show that the danger from the plaintiff's being at large was not merely possible, but probable.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, Oct. 18-20. Dr. Louis J. Mitchell, 29 E. Madison St., Chicago, Secretary.
American Public Health Association, Cleveland, Ohio, Oct. 16-19. Mr. A. W. Hedrich, 370 Seventh Ave., New York, Secretary.
Central States Pediatric Society, Cincinnati, Oct. 16-17. Dr. H. T. Price, Westinghouse Building, Pittsburgh, Secretary.
Hawaii, Medical Society of, Honolulu, Nov. 19-21. Dr. F. J. Pinkerton, 45-46 Young Building, Honolulu, Secretary.
Kentucky State Medical Association, Paducah, Oct. 16-19. Dr. A. T. McCormack, 532 W. Main St., Louisville, Secretary.
Medical Association of the Southwest, Hot Springs, Ark., Oct. 16-18. Dr. W. H. Bailey, 115 West 21st Street, Oklahoma City, Okla., Sec'y.
Radiological Society of North America, Detroit, Mich., Dec. 4-8. Dr. M. J. Sandborn, Appleton, Wis., Secretary.
Southern Medical Association, Chattanooga, Tennessee, Nov. 13-16. Mr. C. P. Loranz, Empire Building, Birmingham, Alabama, Secretary.
Tri-State District Medical Society, Peoria, Ill., Oct. 30-Nov. 2. Dr. William B. Peck, Freeport, Ill., Managing Director.
Virginia, Medical Society of, Norfolk, Oct. 31-Nov. 3. Mr. G. H. Winfrey, 104½ W. Grace Street, Richmond, Secretary.
Western Surgical Association, Minneapolis, Minn., Dec. 8-9. Dr. Warren A. Dennis, Hamm Building, St. Paul, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Syphilis, St. Louis

July, 1922, 6, No. 3

*Study of 443 Cases of Hereditary Syphilis with Especial Reference to Results of Treatment. Part I. Social and Clinical Data. P. J. White and B. Veeder, St. Louis.—p. 353.
*Id. Part II. End Results of Treatment. P. J. White and B. Veeder, St. Louis.—p. 371.
Extragenital Chancre. W. J. Young, Louisville.—p. 392.
Diagnosis of Early Syphilis. J. H. Stokes and A. R. McFarland, Rochester, Minn.—p. 395.
Pathogenesis and Treatment of Tabes Dorsalis and General Paralysis. L. B. Alford, St. Louis.—p. 410.
*Unusual Manifestations of Syphilis. W. J. Stone, Pasadena, Calif.—p. 416.
Practical Observations on Syphilis. III. H. H. Hazen, Washington, D. C.—p. 425.
Studies in Standardization of Wassermann Reaction, XXVII. Study of Factors Influencing Titration of Antigen. J. A. Kolmer and M. E. Trist, Philadelphia.—p. 461.
Id. XXVIII. Study of Factors Influencing Amount of Antigen to Employ in Complement Fixation Tests in Syphilis. J. A. Kolmer, Philadelphia.—p. 481.
Quantitative Complement Fixation Test in Syphilis. J. A. Kolmer, Philadelphia.—p. 496.
Wassermann Reaction from Clinician's Point of View. C. J. Broeman, Cincinnati.—p. 499.
Arsphenamin Derivative Suitable for Subcutaneous Administration. C. Voegtlin, H. Dyer and J. W. Thompson.—p. 526.
*Unusual Reaction Following Antisyphilitic Treatment; Jarisch-Herxheimer Reaction. H. A. R. Kreutzmann, San Francisco.—p. 539.
Death Fifty-Five Hours After Intravenous Administration of Neo-Arsphenamin. J. H. Schrup, Dubuque, Ia.—p. 544.
Contribution to Action of Arsphenamin and Mercury on Treponema Pallidum. D. C. Lee, Hot Springs, Ark.—p. 546.
Prophylaxis and Management of Syphilis. J. W. Shuman, Sioux City, Ia.—p. 551.
Distribution and Excretion of Arsenic After Intravenous Administration of Arsphenamin in Children. S. W. Clausen and P. C. Jeans, St. Louis.—p. 556.

Results of Treatment of Hereditary Syphilis.—So far as the individual case is concerned, the results of White and Veeder's study show that a given patient has a fair chance of clinical and serologic recovery or improvement; that such recovery or improvement may seemingly take place on little or practically no treatment, but that the chances for cure or improvement are very much better for a patient treated thoroughly with arsenicals and mercury than for one poorly treated. The earlier the treatment is started the better the result. If in the given case there is either serologic or clinical evidence of involvement of the central nervous system, the chances for recovery or improvement are poor. One is justified, therefore, in treating a case of hereditary syphilis thoroughly with the expectation that the patient will be benefited. As regards the group of cases investigated as a whole the results have been disappointing. The infant mortality rate is three times the rate for infants from all diseases. This is despite treatment and is seemingly dependent on the extent to which the infant's nutrition and metabolic function have been impaired. Further, in approximately one third of the cases there has been involvement of the central nervous system and as a group these have shown little improvement. Although active lesions in these cases have been checked the residue of the infection leaves a child, who as a rule, belongs to the socially unfit. In the group of 308 cases in which end-results are known there were: cured or recovered, 22 per cent.; improved, 35 per cent.; unimproved, 17 per cent.; died, 25 per cent. Thus, in the entire group, regardless of the amount of treatment received, 43 per cent. of patients were either unimproved or died. Despite the intensive work during this period only 22 per cent. are known to have been cured or recovered.

Unusual Manifestations of Syphilis.—Six patients seen by Stone exemplify certain unusual manifestations of syphilis: (1) syphilis, cerebrospinal tertiary, with intraventricular hemorrhage, recovery; (2) syphilis, cerebrospinal tertiary, with intraventricular hemorrhage, recovery; (3) syphiloma of pons varolii with recent hemorrhage, death; (4) Addison's disease, due to syphilitic fibrosis of suprarenals, death; (5) syphilitic fever, simulating typhoid, recovery; (6) syphilitic meningitis, subacute, recovery.

Urticaria Following Antisyphilitic Treatment.—Following arsenic therapy Kreutzmann's patient complained of itching of the right lower leg. Examination showed a reddened urticarial wheal the size of a man's hand over the inner portion of the right tibia. After another treatment the patient complained of intense itching over the entire body. His temperature was 101.2 F. His hands were so greatly puffed up that the tense skin caused pain and the patient was unable to close his fists. The feet were so swollen that shoes could not be worn. There was marked edema of both legs, with pitting on pressure. Over the entire body there were huge urticarial wheals which were most pronounced wherever there was pressure on the skin, as on the back, the buttocks and about the waist. The wheals were raised, felt hot and were dusky red in color. None of the symptoms of arsenic poisoning were present. After six days all symptoms had disappeared.

Archives of Dermatology and Syphilology, Chicago

September, 1922, 6, No. 3

*Yaws: Its Manifestations and Treatment by Neo-Arsphenamin. P. D. Gutierrez, Manila, P. I.—p. 265.
Leukoderma in Pityriasis Lichenoides Chronica. H. E. Michelson, Minneapolis.—p. 288.
*Study of Ringed Hair. L. D. Cady and M. Trotter, St. Louis.—p. 301.
*Is Syphilis Curable and Can It Be Eradicated? V. G. Vecki, San Francisco.—p. 318.
*Simple Quantitative Precipitation Reaction for Syphilis. R. L. Kahn, Lansing, Mich.—p. 332.
Granuloma Inguinale with Lesion on Lower Lip; Report of Case. B. B. Beeson, Chicago.—p. 342.
*Clinical Value of Kolmer Complement Fixation Test for Syphilis. C. H. deT. Shivers, Atlantic City, N. J.—p. 344.
Nail Tumor of Unusual Type. R. L. Sutton, Kansas City, Mo.—p. 351.

Yaws.—Gutierrez had the opportunity of studying several hundred cases of yaws found in a village near Manila in which the disease is endemic. It is transmitted by direct contact. Many of the children in this locality were affected with scabies, and Gutierrez believes that it is responsible for the transmission of the disease. There are three types of secondary eruptions: the frambesiform, the papular and the macular. The macular eruption is described herewith in detail. A new lesion associated with secondary eruptions is described as ichthyotic shins. Three tertiary lesions are described. The disease yields readily to neo-arsphenamin therapy. In 275 patients treated, there was a clinical cure in 94.52 per cent. The secondary eruptions yielded best to the drug, the macular forms best of all. The primary lesions and tertiary keratotic lesions of the palms and soles did not do well.

Ringed Hair.—Cady and Trotter give a summary of eighteen cases recorded in the literature and add some personal cases which occurred in three families. To the unaided eye ringed hair shows alternating light and dark segments varying in length in different persons. The ends of the segments appear to be sharply defined. The condition occurs in normally pigmented hair and in hair turned gray as a process of senescence. It is not due to a lack of pigment or to pigment atrophy. There is no evidence that the condition is caused by an unknown pathologic process. It may vary in the degree to which it affects an individual hair, and may vary widely in the number of hairs it affects in different persons. The condition is compatible with the normal growth of hair. It may be transmitted by heredity directly from one generation to the next.

Is Syphilis Curable?—The statement that syphilis is a comparatively easily curable disease, Vecki says, is no exaggeration. All patients can be cured, but each case must be approached as a rebellious one. Syphilis is not a vice disease—just an infectious disease like any other. Compulsory reporting of the disease to the health authorities in Vecki's opinion would be a calamity—another slap at justice, another assault on the professional secret, and another unconstitutional assault on personal liberty. Progress in stamping out syphilis will be made when proper treatment shall be easy of access and easy to take, and when

it will be made easy for every one to find out whether he has syphilis or not. Syphilis is a curable disease in the hands of an experienced syphilologist, but in order to abolish it antisyphilitic remedies must cease to be dangerous weapons in the hands of the majority employing them. Neo-silver arsphenamin is prompt in its action on primary symptoms. The induration disappears promptly; secondary skin lesions, papules and condylomata lata, which are generally very stubborn, invariably disappear after six or eight injections, and one is always able to obtain a negative Wassermann reaction in from six to eight weeks, and by using a total of 3 to 6 gm. of the remedy. Late syphilis seems to be easier to influence whenever the Wassermann reaction is positive, more difficult in the rare cases in which the blood reaction is negative, although clinical symptoms allow no doubt about the diagnosis.

Precipitation Reaction for Syphilis.—In his original method Kahn used a cholesterinized antigen and because of its high sensitiveness the test was completed after four hours' incubation. In the new procedure a noncholesterinized antigen is also employed. The same alcoholic extract of heart muscle is used with and without the addition of cholesterin. When employing the noncholesterinized antigen, however, it was observed that the rapidity of precipitation is not as marked as in the case of the cholesterinized one. It was necessary to incubate the tests with the former antigen over night in order to elicit complete precipitation in most cases. On the basis of this finding, and because of another consideration, it was deemed best to employ overnight incubation also with the cholesterinized antigen. Finally, it seemed advisable to adopt the plus sign as a basis for recording results of this test. Since a heavy and complete precipitation undoubtedly corresponds with complete fixation of complement in the Wassermann test, it seemed best to employ the nomenclature widely used by workers in connection with the older test. Although the final reading of results is taken after overnight incubation, this test is said not to lose its spontaneous character with strongly positive serums. This is particularly true when employing the cholesterinized antigen. In close to 80 per cent. of serums giving a four plus reaction in the Wassermann test, a definite precipitate will be seen within five minutes when employing this antigen. Kahn believes that this spontaneous phase of the reaction should prove a valuable aid in corroborating an immediate diagnosis of syphilis.

Kolmer Test for Syphilis.—Shivers has employed the Kolmer complement-fixation test for syphilis in 320 cases—some with a definite history of specific infection and presenting clinical evidences of syphilis, others with negative histories and presenting no signs or symptoms of syphilis. The new method has proved a very sensitive and reliable test, much more so than the old method, being frequently positive while the latter is negative. The new method has yielded earlier positive reactions in primary syphilis than other methods, and is much slower in becoming negative when the patient is under treatment than the old method. A negative reaction with the Kolmer method was found to be of more value when giving a prognosis. The new Kolmer method has not yielded falsely positive reactions in nonsyphilitic persons. The method has been proved more valuable in aiding a diagnosis of congenital syphilis in obscure cases than the old method. The new method marks a distinct and valuable advance in the serum diagnosis of syphilis, being much more sensitive and at the same time yielding no falsely positive reactions.

Archives of Ophthalmology, New Rochelle, N. Y.

September, 1922, **51**, No. 5

Correction of Squint by Muscle Recession with Scleral Suturing. P. C. Jameson, Brooklyn.—p. 421.
Filtering Scar. R. H. Elliot.—p. 433.
Phakoerisis. Advantages and Important Details of Technic. I. Barraquer.—p. 448.
Diagnostic Use of Uveal Pigment in Injuries of Uveal Tract. A. C. Woods, Baltimore.—p. 451.
Roentgen-Ray Studies of Nasolacrimal Passageways. D. M. Campbell, J. M. Carter and H. P. Doub, Detroit.—p. 462.
Further Observations of Protein Injections in Severe Ocular Infection. B. W. Key, New York.—p. 471.
Pathology of Uveitis. S. R. Gifford, Omaha.—p. 483.

Arkansas Medical Society Journal, Little Rock

September, 1922, **19**, No. 4

Has Cautery Lost or Gained Ground in Treating Cancer in Different Parts of Human Body. R. C. Dorr, Batesville.—p. 65.
*Treatment of Carbuncle. A. U. Williams, Hot Springs.—p. 68.
Differential Diagnosis Between Appendicitis and Ureteral Calculi; Report of Cases. A. S. Buchanan, Prescott.—p. 69.

Salicylic Acid Treatment of Carbuncle.—As soon as he can secure an opening Williams packs all cavities with salicylic acid as thoroughly as possible. He says this checks the sloughing and is death to the causative microbe. If the lesion is situated so that it is possible, strong compression should be kept up continuously by means of adhesive strips from beyond the outer edge of the invaded tissue, applied alternately from side to side so as to shut off the circulation, leaving a small space in the center for suppuration, using as long strips of plaster as possible. If sufficient compression can be applied properly pain is relieved and further invasion of surrounding tissue is checked.

Boston Medical and Surgical Journal

Sept. 21, 1922, **187**, No. 12

Treatment of Dehydration in Infants. O. M. Schloss, Boston.—p. 428.
Pediatrist's Opportunity. F. R. Kelley, Boston.—p. 429.
Tonsillectomy in Contagious Diseases. E. H. Place, Boston.—p. 434.
Investigation of Reliability of Laboratory Tests and Discussion of Technic of Laboratories in and Near Boston. F. H. Slack, Brookline, Mass.—p. 441.

Florida Medical Association Journal, St. Augustine and Jacksonville

August, 1922, **9**, No. 2

Optic Neuritis Resulting from Hyperplastic Ethmoiditis and Sphenoiditis. S. A. Richardson, Jacksonville.—p. 22.
*Case of an Extralaryngeal Cyst. H. M. Taylor, Jacksonville.—p. 29.
Eye and General Practitioner, with Plea for Early Consultation. A. Miller, West Palm Beach.—p. 32.
Tonsillectomy: Elective Major Operation. J. B. Davis, Daytona.—p. 37.

Case of Extralaryngeal Cyst.—The only complaint elicited by Taylor in his case was severe, distressing choking sensations extending over a period of seventeen months. The patient felt that someone had their hands on his throat. On assuming an upright position, the sensation subsided. There was no impairment of voice or difficulty in swallowing. Laryngoscopic examination showed a round tumor 0.5 cm. in diameter involving the lingual surface and right lateral border of the epiglottis, crowding the epiglottis posteriorly and to the left. The tumor was glistening and of grayish color, with a smooth surface traversed by several large blood vessels. One year later the tumor was excised. There was an immediate discharge of a yellow gelatinous fluid. The examination of the specimen showed it to be a true cyst or cyst adenoma. There was no change or abatement in the severity or frequency of these severe spells of choking, however. There was no recurrence of the tumor. The epiglottis was still turned on itself and occupied the same plane that it did prior to the removal of the cyst. That portion showing a definite entropion was removed. There were no further paroxysms.

Georgia Medical Association Journal, Atlanta

September, 1922, **11**, No. 9

Use of Ophthalmoscope in General Diagnosis. W. G. Lyle, Atlanta.—p. 343.
Influenza Epidemic at Camp Benning, Ga., February-March, 1922. A. J. Bayley, M. C., U. S. Army.—p. 347.
Epidemiologic Work in Army. O. G. Brown, M. C., U. S. Army.—p. 350.
Trophic Disturbances of Lower Extremities in Relation to Syphilis. S. J. Sinkoe, Atlanta.—p. 352.
Preoperative and Postoperative Studies in Goiter. C. E. Waits, Atlanta.—p. 355.
Review of Georgia State Sanitarium Report. H. D. Allen Milledgeville.—p. 359.
*Case of Prediabetes with Bronzing of Skin. S. A. Folsom, Atlanta.—p. 362.
Rôle of Antrum of Highmore as Focus of Infection. L. C. Roughlin, Atlanta.—p. 365.
*Simple Technic for Removing Appendix. E. H. Highsmith, Atlanta.—p. 368.

Case of Prediabetes.—The main features in Folsom's case were: generalized pigmentation of skin since birth of last child two years ago; loss of weight, 15 pounds, in three

months; initial chill and fever for two weeks; unproductive, paroxysmal cough for two weeks; general myalgia and nervousness for past two weeks; night sweats for past week. The entire body was pigmented, the color being that of a light brown. The mucous membranes were normal. The blood sugar was 111 mg. per 100 c.c. There was no sugar in the urine. The clinical diagnosis was: chronic interstitial pancreatitis; lobar pneumonia, lower left lobe. The patient died on the twenty-seventh day of her illness from lobar pneumonia. The patient gave no past or present history which would lead one to suspect her true condition, except the obesity and the pigmentation.

New Method of Removing Appendix.—After the mesoappendix has been tied and freed, Highsmith crushes the appendix just above the base with a Ferguson forceps and ties it with a 000 plain catgut. Then a loop-clamp (which may be of silkworm gut or plain catgut) is slipped down over the appendix to the crushed portion, and is tightened down over the crushed area, being held with the left hand while it is cut away with the right. After the appendix has been cut away the end of the loop-clamp holding the stump is slightly pressed down in the cecum, and tucked in with a Lembert suture for about 3 cm., after which the loop is cut. The stump of the meso-appendix is brought over the sutured area.

Illinois Medical Journal, Oak Park

September, 1922, **42**, No. 3

Symptomatology of Chronic Fatigue Intoxication. E. H. Ochsner, Chicago.—p. 169.
Diagnosis of Foreign Bodies in Bronchi. T. McCrae, Philadelphia.—p. 174.
Report of Deep Roentgen-Ray Therapy as Practiced in Germany. R. T. Pettit, Ottawa, Ill.—p. 178.
Present Status of Chronic Gastritis. A. A. Goldsmith, Chicago.—p. 182.
Simplifying Diagnosis of Some Kidney and Bladder Disease by Use of Cystescope and Roentgen-Ray. O. J. Sloan, Bloomington, Ill.—p. 185.
General Hospital Beds for Acute Mental Cases. C. F. Read, Chicago.—p. 186.
Rôle of Physician and Surgeon in Prophylaxis of Neurasthenia in Convalescents. H. S. Hulbert, Chicago.—p. 190.
Vertigo, and Its Significance as Symptom. O. T. Allen, Terre Haute, Ind.—p. 192.
Psychologic Fads. J. V. Hanna, Peoria, Ill.—p. 195.
Thermal Eye Treatment. S. Rosenblatt, Chicago.—p. 202.
Diagnosis and Management of Occiput Posterior Positions. E. L. Cornell, Chicago.—p. 207.
Anesthesia in Children; Safest Methods and Agents. F. E. Haines, Chicago.—p. 211.
Malignant Glands and Their Proper Treatment with Radium. C. W. Hanford, Chicago.—p. 214.
Influence of Complement on Schick Reaction and on Untoward Symptoms Occurring During T-A Immunization. F. Herb, Chicago.—p. 217. p. 217.

Journal of Experimental Medicine, Baltimore

September, 1922, **36**, No. 3

*Tetanus Bacillus as an Intestinal Saprophyte in Man. C. Tenbroeck and J. H. Bauer, Peking, China.—p. 261.
Epidemiologic Study of Rhinitis (Coryza) in Calves with Special Reference to Pneumonia. F. S. Jones and R. B. Little, Princeton, N. J.—p. 273.
Mixed Cultures of Pure Strains of Fibroblasts and Epithelial Cells. A. H. Ebeling and A. Fischer, New York.—p. 285.
Relation Between Accumulation of Globulins and Appearance of Agglutinins in Blood of New-Born Calves. M. L. Orcutt and P. E. Howe, Princeton, N. J.—p. 291.
Rabbit Septicemia Bacillus, Types D and G, in Normal Rabbits. P. H. De Kruif, New York.—p. 309.
Source of Microorganisms in Lungs of Normal Animals. F. S. Jones, Princeton, N. J.—p. 317.
New Cannulation Method for Measuring Pressure in Pulmonary Artery. W. E. Swift, G. E. Haggart and C. K. Drinker, Boston.—p. 329.
*Experimental Rickets in Rats. VI. Anatomic Changes Which Accompany Healing of Experimental Rat Rickets, Under Influence of Cod Liver Oil or Its Active Derivatives. A. M. Pappenheimer, New York.—p. 335.
*Etiology of Yellow Fever. XIV. Duration of Protective Effect of Anti-Icteroides Immune Serum After Subcutaneous Inoculation Into Animals. H. Noguchi, New York.—p. 357.

Tetanus Bacillus as Intestinal Saprophyte.—Tenbroeck and Bauer have demonstrated tetanus bacilli in 34.7 per cent. of stools from seventy-eight persons. They assert that the tetanus bacillus is growing in the digestive tract, for it is present in persons who have been on a practically sterile diet for a month or more, and one person may eliminate several million spores of tetanus bacilli in a single stool.

Anatomic Changes Accompanying Healing in Rickets.—Rats which had developed rickets were treated by Pappenheimer with cod liver oil or an active fraction of cod liver oil, and the various changes which occur in the healing of the bone lesions were studied. Several phases are described, from the early deposit of calcium salts in the zone of preparatory calcification to the return to normal bone. These stages correspond closely to those found in the healing of human rickets.

Duration of Artificial Immunity in Yellow Fever.—Analysis of the records of instances in which nonimmune persons contracted yellow fever notwithstanding vaccination shows that the onset of disease occurs soon after vaccination, the longest period being thirteen days. Since the average incubation period in yellow fever is six days, it seems that infection must have taken place in some instances during the period while protection was developing. These instances led Noguchi to make a study of the possibility of immediate protection by means of the anti-icteroides serum. It had already been shown that the immune serum protects at once against experimental *Leptospira icteroides* infection, but it remained to determine how long the protection would last. Guinea-pigs were given different quantities of the immune serum and subsequently injected, at various intervals, with a virulent strain of *Leptospira icteroides*. Complete protection enduring five days was obtained with as minute a quantity of serum as 0.002 c.c. per 1,000 gm. of body weight. After five days, however, the immune substance rapidly diminished, and to keep the animal protected for as long as ten days it was necessary to give 100 times as much, or 0.2 c.c. For a man weighing 80 kg., 0.16 c.c. (0.002×80) would theoretically be sufficient to protect for at least five days, 1.6 c.c. for seven days, and 16 c.c. for ten days. This temporary protection may be a valuable antecedent to that furnished by vaccination, since the final effect of the latter cannot be expected until at least from nine to ten days have passed.

Journal of General Physiology, Baltimore

September 1922, **5**, No. 1

Visibility of Monochromatic Radiation and Absorption Spectrum of Visual Purple. S. Hecht and R. E. Williams, Liverpool.—p. 1.
Colloidal Behavior of Serum Globulin. D. I. Hitchcock, New York.—p. 35.
Excretion of Carbon Dioxid by Relaxed and Contracted Sea Anemones. G. H. Parker, Boston.—p. 45.
Cell Penetration by Acids. VI. Chloroacetic Acids. W. J. Crozier, New Brunswick, Me.—p. 65.
Absorption of Nutrients and Plant Growth in Relation to Hydrogen Ion Concentration. O. Arrhenius, Cambridge.—p. 81.
Cataphoretic Charges of Collodion Particles and Anomalous Osmosis Through Collodion Membranes Free From Protein. J. Loeb, New York.—p. 89.
Influence of Electrolytes on Cataphoretic Charge of Colloidal Particles and Stability of Their Suspensions. I. Experiments with Collodion Particles. J. Loeb, New York.—p. 109.

Journal of Industrial Hygiene, Boston

September, 1922, **4**, No. 5

Critical Age as Factor in Labor Turnover. H. D. Kitson, Bloomington, Ind.—p. 199.
Poisoning by Benzol Carbon Tetrachlorid Cement; Early Symptoms of Benzol Poisoning. E. B. Starr.—p. 203.
Diagnosis and Supervision of Industrial Diseases in Germany. L. Teleky.—p. 212.
Industrial Diseases of Fur Cutters and Hatters. A. Hamilton, Boston.—p. 219.

Journal of Immunology, Baltimore

September, 1922, **7**, No. 5

Photolability of Serum Complement. E. G. Lundberg, Copenhagen.—p. 389.
Prophylactic Treatment for Rabies by Means of Standardized Glycerinated Virus. J. McI. Phillips, Columbus, Ohio.—p. 409.
*Study of Precipitin and Complement Fixation Reactions with Tuberculous Exudates with Special Reference to Tuberculous Pleuritis. I. Ogawa, Philadelphia.—p. 423.
Origin and Nature of Alexin (Complement) in Guinea-Pig Blood. L. F. Morrison, Berkeley, Calif.—p. 435.

Precipitins and Complement Fixing Antibodies in Tuberculous Exudates.—The results obtained by Ogawa indicate that in the exudates of tuberculous pleuritis, precipitins and

especially complement fixing antibodies, are found in a large percentage and that a sensitive complement fixation test with special attention to certain technical features, may prove a valuable practical aid to diagnosis.

Journal of Parasitology, Urbana, Ill

September, 1922, **9**, No. 1

Cases of Cutaneous Myiasis: Larvae of Wohlfahrtia Vigil (Walker). E. M. Walker, Toronto, Canada.—p. 1.
Three New Species of Holostomidae. J. E. Guberlet, Stillwater, Okla. —p. 6.
Diagnosis of Intestinal Flagellates by Culture Methods. R. W. Hegner and E. R. Becker, Baltimore.—p. 15.
Councilmania Lafleuri Not a New Ameba. H. Gunn.—p. 24.
Actinomycosis in Fossil Rhinoceros. R. L. Moodie, Chicago.—p. 28.
Tricercomonas Intestinalis and Enteromonas Caviae N.Sp. and Their Growth in Culture. K. M. Lynch, Dallas, Texas.—p. 29.
Embadomonas Sinensis, Faust and Wassell 1921. E. C. Faust, Peking, China.—p. 33.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

September, 1922, **20**, No. 2

*Quantitative Studies in Chemotherapy. VI. Rate of Excretion of Arsenicals, Factor Governing Toxicity and Parasiticidal Action. C. Voegtlin and J. W. Thompson, Washington, D. C.—p. 85.
*Mechanism of Straub Biologic Test for Morphin. W. J. R. Heinekamp, Chicago.—p. 107.
Ipecac in Treatment of Blackhead in Turkeys. H. W. Graybill, Princeton, N. J.—p. 115.
Effect of Epinephrin and Extracts of Pancreas and Liver on Blood Dextrose. E. L. Ross and L. H. Davis, Chicago.—p. 121.
Quantitative Studies in Chemotherapy. VII. Effect of Ligation of Ureters or Bile Duct on Toxicity and Trypanocidal Action of Arsenicals. C. Voegtlin, H. A. Dyer and D. W. Miller, Washington, D. C.—p. 129.
Influence of Arsphenamin and Neo-arsphenamin on Epinephrin Content of Suprarenals. B. Lucke, J. A. Kolmer and G. P. McCouch, Philadelphia.—p. 153.

Rate of Excretion of Arsenicals.—This research by Voegtlin and Thompson reveals an important relation between rate of excretion on the one hand, and toxicity and parasiticidal action on the other. This relationship appears to depend on the differences in physical properties of the arsenicals studied. It is pointed out that changes in the chemical constitution affect the physical properties, which in turn determine the rate of diffusion and distribution in the body and the path and rate of excretion of the arsenic, thus governing the toxicity for the host and the therapeutic action.

Straub Biologic Test for Morphin.—Heinekamp asserts that the Straub biologic test is due to direct stimulation of the cord. It is not specific for morphin, but is indicative of spinal cord stimulation.

Journal of Urology, Baltimore

September, 1922, **7**, No. 3

*Coincident Calculus and Diverticulum of Bladder. J. L. Crenshaw and C. B. R. Crompton, Rochester, Minn.—p. 185.
Report Following Use of Mercurosal in Treatment of One Hundred and Fifty Cases of Syphilis. W. E. Keane and J. G. Slaugenhaupt, Detroit.—p. 197.
Hydatid Cyst at Site of Prostate. H. W. Plaggemeyer and R. E. Cumming, Detroit.—p. 207.
Endoscopic Diagnosis of Minor Degrees of Prostatic Obstruction and Their Treatment per Urethram. H. M. Young, St. Louis.—p. 227.
*Action of Benzyl Benzoate and Morphin on Vesical Sphincter. W. J. Stater, Boston.—p. 239.
Pressure Used in Pyelography and Its Effects on Kidney. L. C. Todd and S. R. Thompson, Charlotte, N. C.—p. 247.
Experimental Study of Ureter after Nephrectomy. Report of Case of Pyo-Ureter. R. L. Latchem, Rochester, Minn.—p. 257.

Coincident Calculus and Bladder Diverticulum.—Among 222 cases of diverticula of the bladder of such size or shape as to make them of importance pathologically, there were twenty-eight cases (12.1 per cent.) of diverticula and bladder stone which Crenshaw and Crompton analyzed. These diverticula varied in size from 2 to 3 cm. in diameter to large sacs holding many ounces, and in some instances they were larger than the bladder itself. The lateral walls and base were the most frequent areas of communication with the cavity of the bladder, although a few were found in which the opening was in the posterior wall or dome of the bladder. These cases are divided into three groups: (1) stone in the bladder without stone in the diverticulum, thirteen cases; (2) stone in both the diverticulum and the bladder, nine cases, and (3) stone in both the diverticulum alone, six cases. There were four deaths (14.2 per cent. of twenty-eight). One patient died the seventy-second day after suprapubic removal of the stones from the bladder and resection of a carcinoma at the mouth of the diverticulum. Death resulted from extension of the carcinoma. One patient died the seventeenth day after a suprapubic drainage for gangrenous cystitis; death was the result of renal insufficiency and sepsis. Two patients died without operation, one from carcinoma of the larynx and one from perinephritic abscess and sepsis. There was no mortality following the removal of diverticula or of stones from diverticula.

Action of Benzyl Benzoate and Morphin on Vesical Sphincter.—The fact that the administration of morphin is followed by a marked increase in the sphincter tonus and that benzyl benzoate lowers the sphincter tone both in normal rabbits and in those with an increased tonus due to the previous administration of morphin, Stater asserts, is consistent with the clinical observations of bladder distention relieved by benzyl benzoate in cases in which therapeutic doses of morphin have or have not been administered.

Military Surgeon, Washington, D. C.

Septemer, 1922, **51**, No. 3

Proposed New Standardized Field Carrying Device for Individual Equipments of Medical Department, U. S. Army, from a Study by Medical Department Equipment Laboratory Submitted to Surgeon General of Army. J. P. Fletcher.—p. 227.
Insistent Campaign for Venereal Disease Control in Army of France. A. N. Tasker.—p. 240.
Reinfection in Syphilis. Report of Case. C. E. Brenn.—p. 250.
Social Hygiene. P. C. Hutton.—p. 257.
Use of Desiccated Blood Serum in Selection of Donors for Transfusion. W. D. Gill.—p. 285.
*Case of Primary Intravascular Tumor; Probably a Spindle Cell Sarcoma. A. Egdahl, Rockford, Ill.—p. 288.
Deafness. A. G. Wilde.—p. 292.
Study of Schick Reaction and Toxin-Antitoxin Immunization Against Diphtheria. F. E. Gesaner.—p. 299.
Post-Measles Pneumonia. P. E. McNabb.—p. 313.
Strabismus and Its Treatment. R. H. Goldthwaite.—p. 327.

Primary Intravascular Sarcoma.—Egdahl's patient had a mass on the anterior aspect of the right wrist, about the size of a small apple. From this a thick, tortuous branch extended up over the forearm almost to the elbow. This in turn had several smaller tortuous branches, one of which extended up over the back of the thumb. A diagnosis of a malignant tumor was made, and operation advised. The tumor, which was easily removed, was found to be composed of veins filled with a firm, solid growth, but toward the tapering points the growth slipped easily out of the veins, as a finger out of a glove. On examination it was decided that the tumor was a spindle cell sarcoma and that the site of origin was in the wall of the vein. This view was strengthened by the appearance of what may be a metastatic nodule at the angle of the right lower jaw. A roentgenogram of the chest showed a nodule of fair size to the left of the hilum, possibly a metastatic nodule.

New Jersey Medical Society Journal, Orange

September, 1922, **19**, No. 9

Tuberculosis Campaign and Some of Its Accomplishments. H. R. M. Landis, Philadelphia.—p. 229.
Has Quinin Place in Treatment of Pneumonia? C. J. Murn, Paterson, N. J.—p. 233.
When Not to Operate, or When to Operate with Reservations? G. Blackburne, Newark.—p. 238.
What Medical Society Means to Physician. W. Graves, St. Louis.—p. 249.
Dignity and Value of Organized Medicine. T. R. Ray, Shelbyville, Tenn.—p. 250.
*Tetanus Following Vaccination. L. G. Shapiro and A. Shulman, Paterson, N. J.—p. 253.

Tetanus Following Vaccination.—Shapiro and Shulman describe a case of tetanus occurring in a child, 2 years of age, fifteen days after vaccination. Tetanus bacilli were recovered from the vaccination wound and the disease was reproduced in a guinea-pig. The condition of the wound with the primary scab torn off and a secondary dirt crust, suggested the possibility of infection, subsequent to the inoculation of the virus. This appeared more likely because the severity of the disease suggested a short incubation period.

The virus seemed an unlikely source of infection since no other cases of postvaccination tetanus occurred at the same time. No tests of the vaccine were made.

New Orleans Medical and Surgical Journal

September, 1922, **75**, No. 3

Roentgen-Ray Diagnosis of Diseases of Lungs. A. Granger, New Orleans.—p. 107.
Eyes and Endocrines. C. A. Bahn, New Orleans.—p. 121.
Treatment of Pyelonephritis by Pelvic Lavage. M. H. Foster, Alexandria, La.—p. 128.
Orbital Abscess. J. L. Sclaes, Shreveport.—p. 136.

New York State Journal of Medicine, New York

September, 1922, **22**, No. 9

*Establishment of Temporary or Permanent Pulmonary Lip Fistula in Conservative Treatment of Advanced Bronchiectatic Lung Abscess. W. Meyer, New York.—p. 389.
Tonsillectomy. M. F. Jones, New York.—p. 392.
Avoidance of Pulmonary Abscess with General Anesthesia in Nose and Throat Surgery. J. T. Gwathmey, New York.—p. 394.
Physical Signs in Pulmonary Abscess. O. M. Schwerdtfeger, New York.—p. 397.
Roentgenologic Interpretation in Pulmonary Abscess. W. H. Stewart, New York.—p. 398.
*Interpretation of Posture of Parkinsonian Syndromes in Terms of Neuromuscular Mechanism. W. M. Kraus, New York.—p. 399.
*Compensatory Mechanism in Status Thymicolymphaticus. W. Timme, New York.—p. 404.
Surgery of Spleen. R. H. Fowler, Brooklyn.—p. 407.
Protein Injections in Severe Ocular Infection. B. W. Key, New York.—p. 415.
Acute Pancreatitis. H. R. Trick, Buffalo.—p. 420.
Ten Years' Experience with Nitrous Oxid as an Anesthetic. P. J. Flagg, New York.—p. 422.
Leptospiras, Pathogenic and Nonpathogenic. H. Noguchi, New York.—p. 426.

New Operation for Advanced Lung Abscess. — Meyer describes a method which he claims often cures the active lung disease in a very simple manner, viz., by through, direct and prolonged drainage and increased ventilation, secured by means of establishment of a temporary or permanent lung-lip fistula, which, after the principal cavity is emptied of its contents—pus, old fibrinous coagulations, etc.—ventilates the same directly, and does away quickly and definitely with the foul odor of the sputum.

Analysis of Posture in Parkinson's Disease.—Kraus asserts that the defects in posture and the contractures of the parkinsonian syndrome indicate an imbalance between the activities of certain ventral and dorsal muscles. As a result of this imbalance, the activity of certain ventral muscles becomes greater than that of certain dorsal muscles. Normal or, better, increased tone, is required to make this imbalance manifest. The defects of posture and of tone are separate and distinct and are not due to disorder of a single physiologic system.

Compensatory Mechanism in Status Thymicolymphaticus. —There is abundant evidence, in Timme's opinion, that cases of status thymicolymphaticus undergo a gradual change through one of several decades leading finally to a more or less adequate state which enables the patient to take his place in a competent unit among his fellows. The enabling mechanism is composed of several component glandular organs, chief among which are probably the thyroid and the pituitary. Anywhere in the course of the compensation, cessation of the process may take place, leaving the patient only partly efficient, giving signs of symptoms of the deficiency of the particular gland or glands involved. If this is properly recognized, a method of assisting the compensatory progress suggests itself. It is, furthermore, of the greatest importance to recognize the signs and symptoms of the overactivity of the connecting mechanism so that they be not treated as pertaining to a disease process but to a defensive one.

Pennsylvania Medical Journal, Harrisburg

September, 1922, **25**, No. 12

Chemical Control of Respiration. J. J. R. Macleod, Toronto.—p. 831.
Importance of Examining Diaphragm. E. H. Funk, Philadelphia.—p. 834.
Clinical Interpretation of Phthalein Test and Ambard Coefficient in Certain Disturbances of Kidney Function. J. A. Lichty and W. A. Bradshaw, Pittsburgh.—p. 838.
*Analysis of Cause of Fever in Early Life with View to Diagnosis. J. C. Gittings and J. D. Donnelly, Philadelphia.—p. 842.
Otitic Phlebitis Without Thrombus. B. A. Randall, Philadelphia.—p. 847.
Sympathetic Ophthalmia. N. S. Weinberger, Sayre.—p. 848.
Tuberculin Therapy in Surgical Tuberculosis. H. A. McKnight and H. Trager, Philadelphia.—p. 853.
Conservative Obstetrics. G. M. Boyd, Philadelphia.—p. 859.
Frequency of Indigestion of Fats During First Two Years of Life; Causes and Treatment. J. D. Stevenson, Beaver.—p. 865.
Diagnosis and Treatment of Nocturnal and Diurnal Enuresis. F. B. Jacobs, West Chester.—p. 867.
Pulmonary Abscess Due to Lodgment of a Tooth. E. J. Patterson, Pittsburgh.—p. 869.
Diseases of Accessory Nasal Sinuses. W. D. Chase, Bethlehem.—p. 871.

Cause of Fever in Children.—Infections of the respiratory tract and the acute intestinal disorders comprised 59.6 per cent. of what may be called the more serious forms of febrile disease among 734 cases reviewed by Gittings and Donnelly. If to these are added cases of meningitis, otitis, pyelitis, heart and skin disease and the exanthems, more than 87 per cent. of all the febrile cases were comparatively easy to diagnose by ordinary careful clinical examination, with a minimum of aid from the laboratory other than in the differentiation of the types of meningitis and in throat cultures. Seventy-five per cent. of all the patients were under 3 years of age. A majority of the cases were admitted with fever which was due solely to the condition of the ears. The authors emphasize that the examination of a child with fever is not complete without an examination of the membrana tympani. When the cause of fever cannot be determined, a drop or two of urine should be examined under the high power objective for pus cells. When a leukocytosis is present a differential count should be made. When the cause of the fever is at all obscure such examination becomes the irreducible minimum.

Virginia Medical Monthly, Richmond

September, 1922, **49**, No. 6

Correction of Facial Defects with Special Reference to Nutrition of Skin Flaps and Planning of Repair. C. C. Coleman, Richmond.—p. 301.
Cataract. J. A. White, Richmond.—p. 306.
Railway Industrial Surgery. E. L. Kendig, Victoria.—p. 311.
Relation of Age to Disease in Childhood. W. M. Johnson, Winston-Salem, N. C.—p. 313.
Diseases Associated with Protein Sensitization. W. T. Vaughan, Richmond.—p. 316.
Development of Public Health Activities in Rural Districts. W. F. Draper.—p. 322.
Maxwell Antrum Punch. G. M. Maxwell, Roanoke.—p. 324.
Moral Conditions of Present Day. E. M. Mann, Kenbridge.—p. 325.
Gastro-Intestinal Disorders of Infants. R. M. Cox, Portsmouth.—p. 327.
Management of Convergent Strabismus. V. M. Hicks, Raleigh, N. C.—p. 332.
Dentistry from View Point of Neurologist. J. K. Hall, Richmond.—p. 335.
Two Cases of Syphilis of Eighth Nerve and Inner Ear. E. G. Gill, Roanoke.—p. 337.
Modern View of Cancers. C. M. Blackford, Staunton.—p. 339.
*Unusual Appearance of Bullet Wound. J. M. Whitfield, Richmond.—p. 342.
Successful Heterogenous Testicular Transplantation in Man. M. Thorek, Chicago.—p. 343.
Syphilis of Lung; Report of Case. A. T. Hawthorne, Harrisonburg. p. 345.
Optometry—Its Limitations and Dangers. H. H. McGuire, Winchester. —p. 348.
*Historical Note on Appendicitis. B. M. Randolph, Washington, D. C. —p. 351.

Unusual Appearance of Bullet Wound.—Whitfield reports a case of suicide by firing a shot into the head in which the exit wound presented burned hair on the edges. He states that this knowledge may prove very advantageous to a physician on the witness stand who is being rigorously cross-examined by a persistent and astute lawyer.

Early Description of Appendicitis.—Randolph reprints a description of appendicitis published by Richard Bright and Thomas Addison in 1839, forty years before the contribution of Fitz.

Wisconsin Medical Journal, Milwaukee

September, 1922, **21**, No. 4

Lethargic Encephalitis—Experimental and Cultural Study. W. Thalhimer, Milwaukee.—p. 125.
Lethargic Encephalitis. L. M. Warfield, Ann Arbor, Mich.—p. 127.
Hydronephrosis. I. R. Sisk, Madison.—p. 132.
Dilatation of Duodenum. W. J. Tucker, Ashland.—p. 136.
Serious Menace. O. B. Bock, Sheboygan.—p. 137.
Roentgen-Ray and Clinical Findings in Normal Chest of Child.—p. 140.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

June, 1922, **27**, No. 1

Pathologic Changes Produced in Those Rendered Insensible by Electric Shock and Treatment of Such Cases. T. M. Legge.—p. 1.
Id. Mr. Scott Ram.—p. 5.
Id. A. G. Levy.—p. 9.
*Id. J. A. MacWilliam.—p. 11.
Hilum Tuberculosis. G. T. Hebert.—p. 13.
Case of Pneumothorax. F. T. Burkitt.—p. 21.
Unusual Fracture of Tibia and Fibula. E. Scott.—p. 26.

July, 1922, **27**, No. 2

Normal Stomach. Lebon and Colombier.—p. 34.
Normal Roentgen-Ray Stomach. M. Peremans.—p. 46.
Abnormal Stomach. A. Reid.—p. 52.
Present-Day Value of Opaque Meal Examination in Gastric Lesions. S. G. Scott.—p. 58.

Treatment of Electric Shock.—By experimental investigation MacWilliam has found that there are two modes of immediate death by electric shock, and there may be a combination of the two. In the ventricular fibrillation due to electric shock, artificial respiration should be at once begun to keep open the possibility of recovery of the ventricular beat which may possibly occur, though if the period of ventricular fibrillation is more than a very brief one, the central nervous system will probably have suffered irretrievable damage from the period of circulatory arrest. The only active remedial measure that has been found useful in ventricular fibrillation so far, viz., massage of the heart through the diaphragm after the abdomen has been opened, is obviously not available under the conditions in which electric shock occurs. Heart massage, when applicable, is rendered much more effective by the intracardiac injection into left ventricle or a vein of urethane, from 0.025 to 0.25 gm.; strontium chlorid, from 0.01 to 0.06 gm.; epinephrin, from 0.1 to 1 mg.; herudin, from 8 to 10 mg.; pilocarpin (injected into vein), 0.0025 gm.

British Medical Journal, London

Sept. 9, 1922, **2**, No. 3219

Indications for, and Limitations of, Surgery in Chronic Abdominal Disease. J. Sherren.—p. 455.
Pain in Genito-Urinary Affections: W. K. Irwin.—p. 457.
Two Cases of Intracranial Complication of Acute Ear Disease. P. MacDonald and J. Acomb.—p. 458.
*Diagnosis of Septic Sinus Thrombosis. W. Milligan.—p. 459.
Difficulties Presented by Cases of Septic Sinus Thrombosis. L. Colledge.—p. 460.
Benign Forms of Otogenic Meningitis. H. Mygind.—p. 465.
Is It Worth While to Remove Aural Polypi? J. S. Fraser and S. Young.—p. 467.
Affections of Superior Opening of Esophagus. D. R. Paterson.—p. 468.
Affections of Lower Segment of Esophagus. W. G. Howarth.—p. 470.
Solution of Trinitrin in Acute Nephritis with Dropsy. J. T. MacLachlan.—p. 473.
Rupture of Quadriceps Treated by Suture. L. W. Dryland.—p. 473.
Abnormal Anterior Fontanel. C. J. H. Aitken.—p. 473.
Treatment of Pulmonary Tuberculosis by Tuberculin. W. Stobie.—p. 473.

Diagnosis of Septic Sinus Disease.—The disease with which sinus thrombosis is most likely to be mistaken in Milligan's experience is typhoid. During the first week of an attack of typhoid many of the symptoms are almost identical with those of sinus thrombosis, and if by chance the patient happens at the same time to have a suppurating ear confusion becomes confounded. The presence, however, of a Widal reaction and petechiae and the absence of very marked variations of temperature with rigors or chills are as a rule sufficiently distinctive. At times it is difficult to distinguish thrombosis from a central bronchopneumonia. The persistent cough, the rusty sputum, and the more even temperature serve, however, as useful differential diagnostic aids. From malaria it is to be distinguished by means of a blood examination and the discovery of *Plasmodium malariae*. In rare cases in infants and young children severe gastric attacks, especially if at the same time the patient has running ears, are liable to mask an existing thrombosis and to confuse diagnosis. Typical cases present no great difficulty in diagnosis, but atypical and latent cases present extremely complex problems. Milligan has no hesitation in performing an exploratory operation, in exposing or actually slitting up the sinus, purely and solely for diagnosis purposes.

Glasgow Medical Journal

August, 1922, **98**, No. 2

Short Sketch of History of Early Medicine. J. F. Fergus.—p. 81.
Splenomegaly and Splenectomy. J. S. McKendrick.—p. 101.
Treatment of Amebic Dysentery by Alcresta and Emetin. A. S. M. MacGregor and J. Frew.—p. 114.
Minor Displacements of Coccyx. E. F. Cyriax.—p. 118.

Indian Medical Gazette, Calcutta

August, 1922, **57**, No. 8

Filariasis at Puri. S. K. Roy and S. C. Bose.—p. 281.
Observations on "Ulcus Tropicum" in North Palestine. K. C. Sen.—p. 286.
Relative Rate of Absorption of Solar Radiant Heat of Silt Laden Waters. A. D. Stewart.—p. 289.
*Carbon Tetrachlorid in Helminthiasis. J. B. McVail.—p. 290.
Remarks on Typhus Fever of Kumanon, and on Suggestion That It Is Transmitted by a Tick. F. W. Cragg.—p. 291.
Toxic Jaundice of Unknown Origin in Andamans. A. Bayley de Castro.—p. 292.
Primary Carcinoma of Liver. W. L. Forsyth.—p. 295.
Some Contraindications to Intracapsular Operation for Cataract Based on 8,000 Cases by an Intracapsular Operator. H. T. Holland.—p. 296.
Case of Large Ovarian Cyst. C. B. McConaghy.—p. 297.
*Postmortem Examination in Cerebral Malaria. New and Simple Method of Demonstrating Parasites in Capillaries of Brain. R. N. Raja.—p. 298.
Case of Multiple Hemorrhages. S. R. Prall.—p. 299.

Carbon Tetrachlorid in Helminthiasis.—McVail relates his experiences with carbon tetrachlorid. He has given children, aged 12, 1 dram each on two successive days without ill effects. A dose of 60 minims in a very old man was followed by irregularity of the pulse and slurring speech. Seventy minims on two successive days is the largest dose McVail has given to an adult. Carbon tetrachlorid is a soporific. At a certain leper asylum fifty-one patients were given a 60 minim dose one evening and all slept so soundly that a burglar was able to remove the contents of the rice godown during the night. It does not appear to aggravate albuminuria and may be given with confidence in cases of kala-azar complicated with ankylostomiasis during the remissions of temperature, though kala-azar cases stand chenopodium badly. Carbon tetrachlorid is of little value against ascaris, trichiuris, and *Hymenolepsis nana*. On the other hand, this drug appears to be almost specific for threadworms. In thirteen cases oxyuris worms were found in the stools after a single treatment with carbon tetrachlorid, and in four cases after a double treatment, though oxyuris ova had been found during the previous microscopic examination only in three cases out of the seventeen.

Demonstrating Malaria Parasites in Brain Capillaries.—A piece of brain tissue from the cerebrum or cerebellum is pressed between two slides and the material thus obtained is transferred to a clean slide and spread out with the edge of another slide taking care to draw the spreader in only one direction. The smears are dried in the air or over a flame, fixed with alcohol or equal parts of alcohol and ether and stained by Giemsa's method or by diluted Leishman's stain; or they may be stained by the ordinary Leishman's method without preliminary fixation. Raja asserts that smears prepared in this way usually contain several portions of capillaries of varying length which, in cases of cerebral malaria, are filled with malarial parasites.

Japan Medical World, Tokyo

August, 1922, **2**, No. 8

Studies on Sheep Pox. M. Tsurumi, T. Toyoda and T. Inouye.—p. 221.
Duration of Life of Clonorchis Sinensis Infecting Animal Body. M. Muto.—p. 224.
*Experimental Studies on Prevention of Peritoneal Adhesions. T. Kubota.—p. 226.
Lumbar Spinal Anesthesia, as Method of Painless Birth. T. Hosaka.—p. 229.

Use of Papain to Prevent Peritoneal Adhesions.—Kubota used successfully in his experimental work on the prevention of peritoneal adhesions a refined papain. The powder is sterilized at 100 C. for one hour and pulverized in a mortar,

then dissolved in physiologic solution of sodium chlorid making a solution of from 0.001 to 0.0005 per cent. This solution is filtered through a filter paper. The filtrate is warmed to the body temperature before use. In rabbits and dogs, 10 c.c. of the solution was soaked in gauze and rubbed over the area two or three times to prevent the adhesions. In a case of extensive separation of adhesions, besides the local application, 10 c.c. of the solution was poured into the abdominal cavity just before the closure of the abdominal wall. No toxic effect followed the injections of 1 c.c. of 1 per cent. solution intravenously and 2 c.c. abdominally in a mouse of 15 gm. body weight and 40 c.c. intravenously and 50 c.c. abdominally in a rabbit weighing 2,000 gm. Injection of 5 c.c. of the concentrated solution into the abdomen killed the rabbit in from two to six hours.

Journal of Tropical Medicine and Hygiene, London

Sept. 1, 1922, **25**, No. 17

Laryngeal Complications of Tropical Diseases. W. S. Sharpe.—p. 273.
Linguatulids Parasitic in Monitors. New Genus Sambonia. F. Noe and G. S. Giglioli.—p. 276.

Lancet, London

Sept. 9, 1922, **2**, No. 5167

*Efficiency of Man and Factors Which Influence It. E. P. Cathcart.—p. 547.
*Rickets, Marasmus and Scurvy. J. H. Thursfield.—p. 551.
*Pelvic Appendix. R. Morison.—p. 553.
*Salivary Glands in Carcinoma. L. S. Dudgeon and P. H. Mitchiner.—p. 558.
*Periodic Alkalemia with Alkalosis in Adult. W. MacAdam and J. Gordon.—p. 560.
Scope of Vaccine Therapy. C. E. Jenkins.—p. 563.

Sept. 16, 1922, **2**, No. 5168

Pleural Effusion. A. Ramsbottom.—p. 595.
Dyspituitarism, Obesity and Infantilism. H. L. Tidy.—p. 597.
*Pathology of Sydenham's Chorea. J. G. Greenfield and J. M. Wolfsohn.—p. 603.
Amaurosis in Infants. P. G. Doyne.—p. 607.
Bacterial Food Poisoning From Mutton. W. A. Young and G. D. Dawson.—p. 608.
Case of Sporadic Infection by Bacillus Aertrycke. R. E. Pleasance.—p. 609.
*Hemolytic Streptococci in Feces of Patients Suffering from Scarlet Fever and Nephritis. E. Wordley.—p. 610.
*Errors of Refraction in Hyperthyroidism. A. Sourasky.—p. 611.
Case of Multiple Pancreatic Calculi: Removal and Recovery. E. C. Lindsay.—p. 612.

Factors which Influence Efficiency.—The real industrial efficiency of the worker, Cathcart says, cannot be causally related to any single factor. It is not the mere capacity of the individual to perform so many kilogrammeters of work in a given time with the smallest expenditure of energy. The quest of efficiency involves the whole welfare of the race and nation, and calls for the closest and most intimate cooperation between the scientific investigator, the employer and the employee. It is no more capable of being settled on a communistic than on a capitalistic basis; it can only be satisfactorily attacked when mutual distrust of motives, capacities, and methods is stilled.

Early Signs of Rickets.—The early signs of rickets on which Thursfield lays stress are: (1) head sweating and restless sleep; (2) loss of muscle tone; (3) polyuria; (4) pallor; (5) alteration in the bones of the skull.

Symptoms of Pelvic Appendix.—Inflammation of the pelvic appendix, Morison says, can still mislead diagnostic experts. The ordinary symptoms of appendicitis—abdominal pain and fever—may both be absent in pelvic appendix cases. In many pelvic appendix cases there is no severe early pain. Not until the appendix has perforated, generally at its distal end, are urgent symptoms noted. Absence of pain is not special to the pelvic appendix, but is more common in this than any other variety. The explanation offered is that tension is not present, because this type of appendix can empty itself, and the first serious pain results from perforation. Frequency of micturition, especially in boys, and in rare cases retention of urine, occurs as an early symptom. Careful rectal examination may save the situation in a difficult case. So may a blood count. Pelvic abscess may result from the localization of a diffuse peritoneal infection, from leaking of an abscess connected with the appendix in the right iliac fossa, or from a leaking pelvic appendix. Rectal tenesmus is the most suggestive symptom of a pelvic abscess. The treatment of an inflamed pelvic appendix is to remove it as soon as a diagnosis has been made. After the second day from perforation it is seldom wise to operate from the abdomen, and this should never be done if the intestines are distended or the patient is actually ill. Medical treatment is then the method of choice, until the abscess points in the rectum so prominently that it can safely and easily be opened there. Intestinal obstruction follows operations for pelvic appendicitis with disturbing frequency. When convalescence seems assured, during the second or third week, it develops suddenly. Early operation will save nearly every patient—delay is deadly. Following abdominal operation for pelvic abscess a complicated fecal fistula may refuse to heal and threaten life. In women vaginal hysterectomy will save the majority of these dangerous cases.

Salivary Glands in Carcinoma.—Dudgeon and Mitchiner assert that in the majority of cases of carcinoma of the tongue and floor of the mouth the salivary glands are not the seat of carcinoma. In nearly all cases the changes present in these glands are of a chronic inflammatory nature, somewhat analogous to the changes met with in the pancreas in chronic pancreatitis, and apparently due to infection from the mouth along the ducts. In other cases no microscopic change can be seen. The lymph nodes in this area show malignant changes in only 27.3 per cent. of early and 50 per cent. of late cases, though inflammation is always present. It would appear, therefore, in certain cases with early carcinoma of tongue to be justifiable to leave the submaxillary area untouched at operation, though clinical experience teaches that the risk of the subsequent appearance of metastases is very great.

Periodic Alkalemia with Alkalosis.—A case is described by MacAdam and Gordon of periodic vomiting in an adult, aged 39, which has continued over a period of five years. In addition to a constant acetonuria during the attacks, the other notable feature of the urinary examination is an abnormally low ammonia index. Investigations of the blood and alveolar air show that during the attacks of sickness there is a low hydrogen-ion concentration of the blood, a low carbon dioxid, tension of the alveolar air, and a high carbon dioxid combining power of the blood plasma—a condition of alkalemia with alkalosis. Treatment with large doses of decinormal hydrochloric acid, to counteract this abnormal alkaline reaction of the blood and body tissue, gave satisfactory results; the administration of ammonium chlorid was unsuccessful owing to vomiting being immediately induced. The clinical association of acetonuria with a condition of alkalemia is thus demonstrated. It is possible that these findings afford an explanation of some of the unsatisfactory results following the administration of large doses of alkalies in certain conditions of acetonuria; while it is suggested that some of those metabolic disturbances—e. g., certain types of the toxemia of pregnancy—in which a low ammonia index has been associated with severe clinical symptoms may be due to the swing of the acid base balance of the blood to the alkaline side.

Pathology of Sydenham's Chorea.—In the case cited by Greenfield and Wolfsohn, the macroscopic appearance of the brain was normal except for some subpial hemorrhage in the occipital region. In many parts of the brain the microscopic changes were of so slight a degree that they might easily have passed unnoticed, but although slight they were quite definite. In other places the changes were so great that they could scarcely have escaped observation. The sections, in fact, were very similar to those from cases of lethargic encephalitis in the earlier stages of the disease, in which the cellular infiltration of the vessel walls is either absent or is not a prominent feature. The authors assume that embolism of cerebral arteries, if and when it occurs in Sydenham's chorea, is not the cause of the typical symptoms, but may possibly cause other more lasting effects, such as the hemoparesis which not uncommonly follows the attacks. They believe that chorea is a meningo-encephalitis of rheumatic origin.

Hemolytic Streptococci in Feces in Scarlet Fever.—Wordley asserts that hemolytic streptococci are more abundant in the

feces from cases of scarlet fever and from cases of nephritis, whether associated with scarlet fever or not, than in the feces of normal patients. The type of hemolytic streptococci isolated from the feces of such cases is not a uniform one. Such streptococci appear to be nonpathogenic to rabbits.

Astigmatism in Hyperthyroidism.—Of twenty cases of hyperthyroidism examined by Sourasky, sixteen had exophthalmos of varying degree. Twenty-nine out of these thirty-two eyes were astigmatic. Of the four cases (eight eyes) of hyperthyroidism without exophthalmos, two patients (four eyes) had astigmatism. The amount of astigmatism present was small. Out of the sixteen patients with exophthalmic goiter, thirteen suffered from headaches. Out of the four hyperthyroid patients, three were subject to headaches. In most cases the history of headaches given corresponded closely with the history of the disease.

Medical Journal of Australia, Sydney

Aug. 5, 1922, **2**, No. 6

Medical Journalese and How to Write It. F. G. Griffiths.—p. 145.
Some Points in Surgical Technic. W. J. S. McKay.—p. 148.
Diathermy in Treatment of Malignant Growths. W. K. Hughes.—p. 152.
Inversion of Uterus. R. Worrall.—p. 158.

Aug. 12, 1922, **2**, No. 7

Influence Listerism Exercises on Obstetrics. G. R. Adam.—p. 175.
*Case of Systemic Blastomycosis. J. R. Williams.—p. 185.
Strangulated Right Inguinal Hernia Containing Stomach and Transverse Colon. A. F. Stokes.—p. 187.

Systemic Blastomycosis.—Williams relates the case of a man, aged 35, who came with the diagnosis of tuberculous meningitis. The patient presented all the signs of acute cerebral mischief. He was widly delirious, irritable, resented any interference and lay coiled up on one side. Four months previously he had influenza, followed by bronchitis and a right-sided pleurisy. The apexes of the lungs were clear, but there was marked dulness, with diminished vocal fremitus and resonance, at the base of the right lung. The spleen and liver were not enlarged. The knee jerks were equal and active; the superficial abdominal reflexes were not elicited; the plantar reflexes were flexor. A double Kernig's sign was obtained. Examination of the fundi revealed optic neuritis. The leukocyte count was 16,800. The patient had no cough and no sputum was obtainable. On three successive occasions there was no response to the Wassermann test. No chorioidal tubercles were found and the optic neuritis was not progressive. The temperature chart showed a practically afebrile course with occasional elevations to 102 F. The patient was in hospital for twenty-nine days and the course of the disease was a gradual decline. The lesion of the lung was regarded as the primary focus, with systemic spread to the meninges. This diagnosis was made four days before the patient's death and the postmortem findings amply confirmed it. Scrapings from the cut surface of the lung and the cerebrospinal fluid taken from the brain contained the blastomyces in enormous numbers. On section the brain presented multiple minute abscesses close to the cortex. There were no gross collections, but tiny aggregations of the parasite. The subarachnoid space was almost filled with a pronounced round cell reaction and numberless parasites. In the brain substance small abscesses were noted containing a blastomycotic collection in the center and weak attempt at repair surrounding it.

Medical Journal of South Africa, Johannesburg

July, 1922, **17**, No. 12

Some Points on Operative Treatment of Myomata. W. G. Grant.—p. 237.
Clonorchis Sinensis: Human Liver Fluke, Found in Chinaman in Johannesburg; Pathology of Case. A. Porter and J. H. H. Pirie.—p. 240.
Some Relations of Radiology to Other Specialties. L. E. Ellis.—p. 244.
Hits and Misses in Diagnosis of Skin Eruptions. C. Pijper.—p. 248.
Prevention of Ocular Defects in School Children. F. H. Robinson.—p. 250.

Practitioner, London

September, 1922, **109**, No. 3

Albuminuria of Pregnancy. A. W. Bourne.—p. 197.
Cesarean Section. J. L. Stretton.—p. 214.
Mitral Traumatism. W. Gordon.—p. 223.
Some Diagnostic Pitfalls in Arthritis. L. J. Llewellyn.—p. 226.
Fracture: Separation of Lower Humeral Epiphysis.—p. 244.
Causation and Treatment of Urinary Incontinence.—p. 250.
Enlarged Prostate Treated Without Operation. R. Creasy.—p. 256.

Sei-I-Kwai Medical Journal, Tokyo

August, 1922, **41**, No. 4

Effect of Extract of Myoma of Uterus on Heart of Frog. T. Hosaka.—p. 1.

Archives des Maladies de l'App. Digestif, Paris

1922, **12**, No. 4

*Etiology of Recurring and Gastro-Jejunal Ulcers. L. Christophe.—p. 233.
*Etiology of Chronic Habitual Constipation. T. E. Hess Thaysen.—p. 250.
Balantidium Coli Dysentery. V. Vedel and J. Baumel.—p. 265.
Ileocecal Invagination Due to Membranous Pericolitis. J. Abadie.—p. 269.
Mega-Esophagus. W. Oettinger and R. V. Caballero.—p. 274.
Concentration of Solutions in Hydrogen Ions. R. Goiffon.—p. 277.

Etiology of Recurring Gastric Ulcers.—This research by Christophe confirms Rosenow's work along similar lines, as published in THE JOURNAL, Jan. 28, 1922, p. 266. Christophe isolated streptococci from the teeth of 3 patients with recurring gastric ulcer. Rabbits were injected with cultures of these streptococci, and 12 of the 14 rabbits developed ulcers and hemorrhagic foci in the stomach mucosa; in the other organs such lesions were exceptional. The elective localizing power of the streptococci in these cases was most remarkable. His proportion of positive results was even higher than Rosenow's 68 per cent. in 168 animals injected. In 212 animals Rosenow injected with 71 different strains of streptococci from normal persons or patients free from ulcer in the digestive tract, only 9 per cent. of the animals developed lesions in the stomach or duodenum. In Christophe's three clinical cases, eradication of the dental focus, and Sippy treatment of the ulcer, induced a clinical cure rendering operative measures unnecessary.

Habitual Constipation.—A similar article by Thaysen was reviewed in these columns, Nov. 19, 1921, p. 1692.

Bulletin de l'Académie de Médecine, Paris

July 25, 1922, **88**, No. 30

Mikulicz Syndrome in Course of Epidemic Encephalitis. G. Guillain et al.—p. 80.
*Arteriotomy for Embolism. L. Sencert and P. Blum.—p. 84.
Vaccination of Infants Against Typhoid. M. Renaud and Duchein.—p. 87.
*Organotherapy of the Liver. J. F. Martin et al.—p. 90.
Nervous Disturbances Traceable to Appendix. C. Poenaru Caplesco and D. Paulian.—p. 93.
*Cholera at Constantinople, 1920-1922. G. Delamare.—p. 98.

Arteriotomy for Embolism.—The embolic obstruction of the axillary artery occurred during coughing. The man of 58 had previously presented symptoms suggesting a tendency to aneurysm of the aorta, but the symptoms had subsided under treatment for syphilis. Sudden agonizing pain and paralysis of the right arm followed the complete obstruction of the axillary artery, and Sencert found the embolus just below the mouth of the inferior scapular artery. Catgut was thrown around the axillary artery a few centimeters above this opening and another around the scapular artery. As these were lifted up, they kinked the arteries and prevented hemorrhage. An incision 1.5 cm. long was made in the axillary artery just below the opening of the scapular, and a thread was passed through each lip of the incision. The clot was 4 cm. long, and the size of a lead pencil. The clot was removed, the artery unkinked; no blood flowed. The incision was then carried upward and a second clot was found, or rather the upper half of the same clot. It was not adherent anywhere, and the upper half was also 4 cm. long. The moment this was extracted, the blood gushed. The vessel was sutured and as soon as the kinking threads were drawn out the radial pulse appeared full and strong. In a few days the last traces of paralysis and retraction of the fingers had disappeared. The arterial tension is now the same in the two arms, and the cure is complete. This is the second case of successful embolectomy published in France.

Organotherapy in Kidney and Liver Disease.—Martin asserts that it is apparently established that ingestion of the

tissue diastases from a healthy organ may effectually combat functional insufficiency of the corresponding organ. The specificity of these tissue diastases seems to be fully settled, he says, and in the research here reported the benefit from daily ingestion of 2 or 3 mg. of liver diastase was manifested by the veering to the normal response of tests to elicit the hemoclastic crisis and phlorhizin glycosuria. In the 150 patients tested the test gave abnormal findings in all the cases with a hemoclastic crisis, but the test elicited the normal response in 20 per cent. of those displaying the hemoclastic crisis. This confirmed that of the two functions of the liver revealed by these tests, the one responsible for the hemoclastic crisis is the more sensitive. Liver functioning is evidently one factor in phlorhizin glycosuria although the latter is of renal origin. Four cases are described in detail.

Cholera at Constantinople.—Delamare expatiates on the efficient work of the health service maintained at Constantinople by the Turk and interallied governments. Constantinople and Greece have thus been saved from cholera constantly menacing them from Russia.

Bulletins de la Société Médicale des Hôpitaux, Paris

July 21, 1922, **46**, No. 25

Case of Malta Fever at Paris. A. Courcoux et al.—p. 1104.
Respiratory Disturbances in Epidemic Encephalitis. C. Vincent and C. Bernard.—p. 1111.
Erythema Nodosum plus Phlebitis. C. Achard and J. Rouillard.—p. 1113.
*Serial Radiography of Region Below Liver. Enriquez et al.—p. 1116.
*Simulation of Hydatid Cyst of Liver. Salomon et al.—p. 1123.
*Acquired Dextrocardia. Bigart and Coste.—p. 1129.
*Argyria. C. Laubry and F. Bordet.—p. 1133.
*Plastic Linitis. Babonneix et al.—p. 1135.
*Quadriplegia from Spina Bifida. P. Marie and A. Léri.—p. 1138.
*Hyperostosis. A. Léri and Joanny.—p. 1141.
*Treatment of Sciatica. B. Weill-Hallé and H. Chabanier.—p. 1145.
Case of Melanodermia. Enriquez et al.—p. 1149.
*Pregnancy Pyelonephritis. Courcoux et al.—p. 1151.
*Treatment of Gastric and Duodenal Ulcer. Le Noir et al.—p. 1156.

Serial Radiography.—A number of cases are described with the typical roentgen findings out of a total of eighty cases in which the differential diagnosis of conditions in the duodenum region was made possible only by serial radiography. In some, the symptoms for which an ulcer seemed to be responsible proved to be merely from an inflammatory process close to the duodenum, with adhesions, but no ulcer. In one case three calculi in the gallbladder had evidently induced a reflex spasm in the duodenum, as conditions here righted themselves after cholecystectomy.

False Hydatid Cyst of the Liver.—Instead of the anticipated cyst in the liver, pneumoradiography revealed that a sclerotic process in lung and pleura had pulled the diaphragm and the liver up out of place. The liver seemed to be otherwise normal.

Acquired Dextrocardia.—The heart had been drawn entirely out of the left side of the chest by traction from the shriveling pleura consecutive to recurring right pleurisy in the young man.

Argyria.—In the case reported by Laubry, the man had been in the habit for six years of cauterizing his gums with a silver nitrate stick on account of recurring stomatitis.

Plastic Linitis.—Necropsy in Babonneix's case revealed an epithelioma in the stomach the seat of plastic linitis, plus a fibroma in the uterus.

Tardy Paralysis from Spina Bifida.—Marie and Léri describe the case of a woman of 54 who had been healthy until the age of 46. Then quadriplegia slowly developed, the spastic paraplegia finally becoming total and complete. It was explained by spina bifida in the seventh cervical vertebra. This would have escaped detection entirely without roentgen examination.

Linear Hyperostosis.—The left arm of the woman of 39 presented a row of bony excrescences extending from the shoulder along the humerus and both bones of the forearm and the two middle fingers. The excrescences lie in an almost straight line along the bones, as melted wax would run down to the tips of the two fingers involved. The lumps had been first noted at the age of 10, and the patient seemed healthy otherwise.

Rheumatismal Sciatica.—A sharp pain in the back of the right thigh was the first symptom in the case described. The pain was continuous and progressive, and the third day it appeared on the other side. The pain spread throughout the entire limb, with a tender point in the ischium-trochanter groove, and on the fibula. There was slight fever, and the man of 32 was given an intravenous injection of 1.5 gm. of sodium salicylate in 75 gm. of distilled water. There was a severe chill reaction, with pains in the legs, and the temperature ran up to 105 F. By the next day all the symptoms had subsided, including the pains. In a second similar case the sciatica was very severe and of over five months' standing. It had come on suddenly while walking and had been so severe as to confine the man to bed for months. No benefit was derived from a course of sodium salicylate by the mouth, but improvement followed an intravenous injection of 3 gm., and the sciatica subsided completely under a total of three injections on successive days.

Pyelonephritis and Bacteriophagia. — Courcoux quotes d'Herelle's saying that the bacteriophagum is capable of invading healthy persons during an epidemic, and thus protecting them against the disease. It is a kind of immunity that is contagious. D'Herelle has utilized this bacteriophagic property on a large scale in treatment of disease in animals and fowls, and Courcoux here reports a clinical case in which the prompt recovery seemed to be due to the colon bacillus bacteriophagum given systematically in treatment of the pregnancy pyelonephritis. The first symptoms had been observed in the young woman at the sixth month of pregnancy. The bacteriophagic lysin was given by a subcutaneous injection, and by injection of 15 c.c. directly into the bladder. There was a considerable reaction for forty-eight hours, but then all the symptoms subsided, the improvement amounting to a clinical cure although the colon bacillus could still be cultivated from the urine. The bacteriophagic action was still evident in the urine at the last examination.

Treatment of Gastric and Duodenal Ulcer.—When sodium bicarbonate is indicated in cases of gastric or duodenal ulcer, Le Noir and his co-workers give it by rectal drip. All the patients comment on the relief from pain, beginning in about half an hour and persisting for several hours. When given at 3 p. m. the relief persists all night. The relief from pain seemed to be more pronounced than when the alkali was given by the mouth in their twenty-seven patients thus treated.

Journal de Médecine de Bordeaux

Aug. 25, 1922, **94**, No. 16

Ileocecal Cancer. E. Loubat.—p. 519.
*Exclusion of Tuberculous Kidney. H. Blanchot.—p. 529.

Conservative Treatment of Tuberculous Kidney.—The periods of remission and improvement sometimes observed with renal tuberculosis are due to the fact that the diseased portion has become walled off. This partial or total exclusion has often served as an argument in favor of conservative treatment. Blanchot reports a case of spontaneous total exclusion of a tuberculous kidney which demonstrates that even in the most favorable circumstances surgical intervention is still the treatment of choice. In his case the course of the renal tuberculosis had been the most favorable possible for five years, the patient regaining his earning capacity. The kidney process had extinguished function completely. But when he resumed regular work the disturbance from the kidney compelled nephrectomy after all. Conditions then were far less favorable than if the kidney had been removed early in the disease.

Presse Médicale, Paris

Aug. 23, 1922, **30**, No. 67

*Blood Pressure in Obesity. C. Aubertin and L. Coursier.—p. 721.
*Tactile Sign of Pleural Effusion. J. Chalier.—p. 723.

The Blood Pressure in the Obese.—Aubertin compares the blood pressure record in seventy obese persons, mostly bedridden for years in an institution, and twenty-four in private practice, not bedridden, all with about the same obesity index. This is obtained by subtracting the height from the weight (metric). The blood pressure was normal in 10.1 per cent. in the first group and in 62.5 per cent. in the second group.

The blood pressure was very high in 43.4 per cent. of the institutional group, and moderately high in 46.3 per cent. His conclusion is that the sedentary life, a poorly balanced, excessively carbohydrate ration, and mild drinking habits cooperate in the institution to induce both the obesity and the high blood pressure, but only in the predisposed. Others, sharing the same conditions in every respect, do not develop obesity and their blood pressure keeps normal. Kidney disease and arteriosclerosis cannot be incriminated, as they are found among those with normal blood pressure and no tendency to obesity as often as in the obese. He rejects completely the assumption that obesity in itself can cause the high blood pressure, but he warns that their frequent coincidence imposes the necessity for taking the blood pressure of the obese. A permanently high blood pressure may escape detection unless directly sought for—the disturbances therefrom being ascribed to the obesity. Apoplexy and sudden death for which the obesity has been held responsible are, in reality, due to the high blood pressure, and this is within our control to a certain extent.

Tactile Sign of Pleural Effusion.—Chalier taps the chest lightly with his fingers, and is thus able to perceive with his finger tips that the area of the chest wall over even a very small effusion is less elastic than elsewhere, and there is a slight sensation of trembling of the wall under the finger. The other hand can be placed on the opposite side of the chest. The tapping is too light to induce any sound. The effusion is generally found at the back, close to the spine, in the ninth to the eleventh interspaces. Puncture may confirm the tactile findings when the effusion is too insignificant to cast a roentgen shadow. Several cases are cited to show the value of this sign which, he repeats, is instructive by the *frémissement et l'adhésion par le tapotement silencieux de la pulpe digitale.*

Aug. 26, 1922, **30**, No. 68

*False Addison's Disease. Roch.—p. 729.
*Treatment of Uterine Cancer. G. Leclerc.—p. 731.
Cirrhosis of Liver with Splenomegaly. M. Hanganutz.—p. 732.
*Quinidin with Digitalis. L. Cheinisse.—p. 734.

False Addison's Disease.—The clinical picture studied here by Roch occurs in the tuberculous long addicted to alcohol.

Uterine Cancer.—Leclerc presents convincing data to sustain his view that radium treatment should precede and not follow the operation, and that the excision of the malignant focus should never be omitted when practicable.

Quinidin and Digitalis.—Cheinisse compares the views of Hamburger and Priest (THE JOURNAL, July 15, 1922, p. 187) with the opposite practice of French clinicians. He cites Deschamps' recent thesis which reported six failures and one success in seven cases of auricular fibrillation treated with quinidin alone, and ten successes with eight failures in eighteen cases in which the quinidin had been preceded by a course of digitalis regardless of whether or not the heart showed signs of insufficiency.

Aug. 30, 1922, **30**, No. 69

The Basal Metabolism in Retarded Growth. Nobécourt and H. Janet.—p. 741.
*Serodiagnosis of Progressing Tuberculosis. P. Armand-Delille et al.—p. 742.
*Dupuytren's Contracture. P. Specklin and R. Stoeber.—p. 743.
*Absorption in Joints. S. Draganesco and A. Lissievici-Draganesco.—p. 745.
Anomalies in the Duodenum. W. Nimeh.—p. 746.

Serodiagnosis of Tuberculosis.—Delille and his co-workers agree with those who regard the complement fixation reaction as an unreliable guide in estimating whether a tuberculous process is progressing or not.

Successful Radiotherapy for Contractures Plus Neuralgia.—In the case reported here the contracture was similar to Dupuytren's contracture but in the course of ten years it involved the aponeuroses of both palms and soles. It was accompanied with intense neuralgia in the arms and legs. There was no evidence of neuritis although the trunk nerves in the limbs were tender. The clinical picture had persisted for twelve years, with no benefit from treatment for rheumatism, etc. Specklin and Stoeber applied roentgen-ray treatment to the regions of the contractures, and the contracture subsided in three of the limbs and also the neuralgic pains. The pains never preceded the contracture; there was usually an interval of months before the neuralgia developed. The man was a gardener, and the disturbances began on the side he used most. In a second similar case the patient was a coal shoveler, and only the right side was affected. The pain was relieved at once by radiotherapy and the aponeurosis returned to clinically normal, but the contracture of the flexor tendon of the elbow did not seem to be influenced. The disturbances were of not much over a year's standing. The treatment started with soft roentgen rays and concluded with radium exposures. In both cases the doses had to be powerful enough to induce slight radium dermatitis.

Absorption in Joints.—Various drugs, including potassium iodid and methylene blue, were injected into diseased joints and the urine was examined thereafter. In other experiments the drug was injected subcutaneously or into a muscle. The results confirmed that the joints possess considerable absorbing power for fluids injected directly into the joint but not for drugs injected elsewhere.

Schweizerische medizinische Wochenschrift, Basel

Aug. 10, 1922, **52**, No. 32

*Albumin Ratio of the Serum. F. Wanner.—p. 785. Idem. F. Rohrer.—p. 789.
Roentgen Ray Treatment of Cancer of Skin. G. Mirscher.—p. 791.
Cataract with Myotonic Dystrophia. U. Lüssi.—p. 796.
Surgical and Nonsurgical Impressions of America. F. de Quervain.—p. 797. Cont'd.

The Albumin Quotient of the Blood Serum.—Wanner discusses Rohrer's recent statements in regard to the ratio between the albumins and the globulins, the refraction, and the viscosity of the blood. Rohrer replies to his objections.

Aug. 17, 1922, **52**, No. 33

*Pneumaturia. H. Walthard.—p. 809.
*Combined Treatment of Metasyphilis. T. Brunner.—p. 812.
*Breathing Sounds in Pulmonary Tuberculosis. F. Lichtenhahn.—p. 816.
*Dermography in Diagnosis. L. Schwartz.—p. 819.
Surgical Impressions of America. F. de Quervain.—p. 823. Cont'n.

Pneumaturia.—Walthard reports a case of intravesical generation of gas in a man of 65 with a chronic catarrhal cystitis. The foamy urine was free from sugar but contained a little albumin. He has been able to find only thirteen cases on record of pneumaturia of intravesical origin in the last forty years. The urine gave an acid reaction in all but one case, and bacteria of the colon bacillus group were always found. His case was under observation for months, but no treatment displayed any efficacy, and the gas production fluctuated without known cause.

Combined Intraspinal Treatment of Tabes and General Paresis.—Brunner reports three cases in detail, with control of the spinal fluid, all showing pronounced improvement under intraspinal neo-arsphenamin treatment plus sodium arsphenamin by vein; an iodid course, and a six weeks' Carlsbad course, with copious drinking to flush out the liver.

Breath Sounds with Incipient Pulmonary Tuberculosis.—Lichtenhahn explains that there can be no settled rules for the interpretation of the auscultation findings with early apical disease. The rules generally taught often prove misleading.

Dermography in Examination of the Vessels in the Skin.—Schwartz has systematized the application of dermography, as he explains. He calls attention to its importance from the diagnostic and other standpoints, when applied serially, with precision and special ereuthometers, as he calls the instrument devised for the purpose.

Pediatria, Naples

Aug. 15, 1922, **30**, No. 16

*Leukemia in Young Children. G. Caronia.—p. 745.
*Foreign Body in Esophagus. L. Leto.—p. 758.
*Spasmophilia. M. Coda.—p. 764.
Achondroplasia in Infant with Syphilitic Parent. G. Milio.—p. 775.

Leukemia in Children.—Caronia reports four cases in children from 28 months to 6 years old. Examination of the bone marrow may clear up many dubious pathologic conditions in children. An inherited taint, syphilis or tuberculosis, is the rule.

Foreign Body in Esophagus.—The special feature of the case described was that the presence of the foreign body had never been suspected. It was the ring handle of a small corkscrew, such as is sold with certain bottles. The corkscrew spiral had been broken off. The ring lay just at the entrance to the esophagus, and was easily fished out with the finger. But it was not discovered until the ring had induced an abscess, and the complications in the mediastinum and lungs proved fatal. The child of 10 had complained for nearly three weeks of pain in its throat and difficulty in swallowing, before it was brought to the hospital with the retropharyngeal abscess.

Spasmophilia.—Coda's review of the prevailing views on the etiology and pathogenesis of spasmophilia incriminates the endocrine system. This may act on the vegetative nervous system or on the calcium metabolism or on what Elliot calls the myoneural conjunction, or on all these elements at once.

Policlinico, Rome

July 24, 1922, **29**, No. 30

*Diphtheria and Pseudodiphtheria Bacilli. M. Pergola.—p. 969.
Diagnosis of Fracture of the Clavicle. S. Auriemma.—p. 972.
The Cocain Peril. C. F. Zanelli.—p. 975.

Differentiation of Diphtheria Bacilli.—Pergola presents arguments to demonstrate that the so-called pseudodiphtheria bacilli found with the genuine diphtheria or in convalescents from diphtheria are in reality true diphtheria bacilli, merely modified by certain factors. They behave on his tellurite culture medium just like true diphtheria bacilli. Pseudodiphtheria bacilli behave quite differently. He has been experimenting with hundreds of strains from different localities, all sustaining these assertions.

July 31, 1922, **29**, No. 31

*Dissociation of Elements of Cerebrospinal Fluid. P. Boveri.—p. 1001.
Apparatus to Hold Mouth Open. O. Brunicardi.—p. 1011.
Test for Indican in Urine. Leti-Testi.—p. 1014.

Dissociation of Albumin and Leukocytes in Cerebrospinal Fluid.—Boveri remarks that in affections involving the meninges the increase of albumin in the cerebrospinal fluid generally parallels an increase in the number of leukocytes. In some conditions, however, there is divergent behavior of the albumin and leukocytes. This dissociation is pronounced in Pott's disease and with compression from an intraspinal tumor, and Boveri has found it as an early sign of lead poisoning. His present communication is to call attention to the excessive albumin content with a primary tumor of the cerebral meninges in a woman of 55. For four months she had been having frequent dizziness, vomiting and somnolency, and finally transient loss of consciousness and subdelirium on rousing. The left eye showed congestion of the retina, and the urea content of both blood serum and spinal fluid was high. The albumin in the cerebrospinal fluid was over 2 per thousand, but there was no lymphocytosis. The spinal fluid seemed otherwise normal. Nothing was found to explain these findings until necropsy about a week later. This disclosed an encapsulated tumor, as large as a pigeon's egg, back of the right occipital lobe. It was a very vascular endothelioma. In another case of meningeal tumor the albumin content was low while lymphocytosis was extreme.

Riforma Medica, Naples

July 10, 1922, **38**, No. 28

*Treatment of Gastric Ulcer. I. Tansini.—p. 649.
Deep Fibroma in Neck. L. Torraca.—p. 650.
*The Prognosis in Typhoid. F. Bergolli.—p. 653.
Muscle Sign in Diagnosis of Pulmonary Tuberculosis. Zagari.—p. 668.

Treatment of Gastric Ulcer.—When Tansini opened the abdomen in the woman of 37 he found an active ulcer in the upper half of the hour-glass stomach, and it was adherent to the liver. This large adherent disk he sliced off with a knife, making the excavation in the liver as shallow as possible, and suturing to leave a smooth surface. The large gap left in the proximal half of the stomach was sutured over a sound introduced through the mouth, and the sound wall was taken up in folds. His aim was to make an even tube out of this first half of the hour-glass stomach, as if it were a continuation of the esophagus. The distal half of the stomach was left unmolested, and the recovery was soon complete and permanent.

The Prognosis in Typhoid.—Bergolli bases his conclusions on 262 cases of typhoid personally studied for the elements on which to base the prognosis. Among the favorable elements he mentions repose during the prodrome; intermissions in the fever, as showing greater resisting power; a low level of the continuous fever of the second half; lower temperature in the morning; a relatively slow pulse. His mortality was only 4.6 per cent. in the 64 cases without enlargement of the spleen, while 85.8 per cent. of those that died had splenomegaly. The mortality in the men that had been given preventive vaccination was 8.6 per cent. and 20 per cent. in the nonvaccinated. There were no rose spots in 58 per cent. of the fatal cases and they were scanty in 28 per cent. and numerous only in 14 per cent. In the graver cases no rose spots were evident in 20 per cent.; they were scanty in 72 per cent. and were numerous only in 8 per cent. This confirms the opinion that when they are numerous the outlook is more favorable. Herpes labialis was observed only in the milder cases. Delirium only during the night seems less grave than both day and night. In all his fatal cases of paratyphoid A there were apathy and stupor, never delirium. Profuse diuresis in typhoid is a good sign, especially when the urine is concentrated. He has never seen but two instances of typhoid cystitis, and two of typhoid parotitis. He enumerates further the unfavorable signs, and in conclusion extols the value of intravenous serotherapy in typhoid.

July 31, 1922, **38**, No. 31

*Closing Lecture of Clinical Medicine Course. E. Maragliano.—p. 721.
Pharmacologic Action of Iron. P. F. Zuccola.—p. 733.

Hemoglobin Test of Liver Functioning.—This lecture concluded Maragliano's fortieth year of teaching this course. Among the achievements of the year he mentions Barlocco's test of liver functioning by injection into the blood stream of dissolved isotonic hemoglobin. In normal conditions this induces merely slight urobilinuria and no change in the bilirubin content of the blood. With liver disease, on the other hand, transient bilirubinemia follows. It may be so intense that it amounts to actual jaundice. This same result follows introduction of hemolyzed blood into the duodenum or stomach.

Tumori, Rome

July 25, 1922, **9**, No. 1

*Induced Cellular Reaction and Cancer Grafts. R. Brancati.—p. 1.
*Roentgen Treatment of Malarial Spleen. S. Dentici.—p. 19.
Fibroma Removed from Palm. U. Stoppato.—p. 31.
Primary Cancer of Renal Pelvis. M. Pavone.—p. 44.
Mixed Tumors of Uterus. S. Cappellani.—p. 54.
Primary Sarcoma of Middle Ear. L. Leto.—p. 61.
Krukenberg's Tumors of the Ovary. D. Pizzetti.—p. 72.

Means to Influence Evolution of Tumors.—Brancati inoculated twelve mice with mouse carcinoma and then injected seven of them with nucleic acid, four times in one week. The difference in the development of the cancer was striking. Only one grew to the diameter of ¼ inch while in the controls four reached ½ inch, and only one was as small as the next to the largest in the treated animals. Other groups gave similar results, all testifying to the depressing and even inhibiting action of the nucleic acid on the tumors. The action was most pronounced and the animals throve better when the nucleic acid was injected in small amounts on alternate days. The spleen and liver also increased notably in size under the influence of the nucleic acid. The tumors showed signs of necrosis. The salutary reaction to the nucleic acid occurs only when the animals are in good condition; with cachexia no beneficial effect was apparent. The effect was also most pronounced when the tumor was small. The extensive Italian bibliography on experimental cancer is appended, in addition to considerable American literature.

Radiostimulation of the Spleen in Chronic Malaria.—Dentici treated the large spleen with small stimulative doses of the roentgen rays in the case of a boy of 16 with chronic malaria. Then the spleen was removed, and the microscope showed unmistakable lymphoid hyperactivity.

Archiv für klinische Chirurgie, Berlin

July 21, 1922, **120**, No. 2

*Spastic Neuroses. B. O. Pribram.—p. 207.
*Nonsuppurative Osteomyelitis in Adults. A. Winkelbauer.—p. 262.
*Suture of Stomach. M. Gara.—p. 270.
*Artificial Bursae. B. Martin.—p. 281.
*Treatment of Exstrophy of Bladder. R. Drachter.—p. 291.
*Fracture of Neck of Femur. R. Bonn.—p. 298.
*Necrosis After Fracture of Neck of Femur. G. Axhausen.—p. 325.
Operations on Bile Passages. P. Walzel-Wiesentreu.—p. 347.
*Epigastric Hernia. H. Smidt.—p. 385.
Import of Cicatricial Infiltrates in Pylorus. G. Kelling.—p. 402.
*Means to Apply Extension to Pelvis. W. Block.—p. 410.

Spastic Neuroses.—Pribram is convinced that the neurosis often has its local origin in some plexus in the wall of the organ involved. This in time sets up a vicious circle which has to be considered in treatment, as well as the local source of the irritation responsible for the neurosis in the first place. It also has to be borne in mind that these subjects present a cooperating element in the line of general myotonic over-excitability of the hollow organs or of some special organ or group of organs. In the respiratory apparatus we have spasm of the glottis and asthma; in the circulatory apparatus, migraine, Raynaud's disease and certain disturbances in conduction of the impulse in the heart. Spasms may occur at almost any point in the alimentary canal and also in the ureters and the bladder. It is impossible to explain a spastic neurosis by the vagus or sympathetic system as a whole system. The local spasm interrupts and prevents the normal course of the stimulus. The dilatation above the spasm is merely in accordance with the general law that contraction of any portion is always accompanied by relaxation of the portion just above. He cites some cases in which the causal irritation could be traced to some removable cause with the prompt cure of the neurosis. In one case there was a diverticulum in the esophagus. Correction of this cured the spasm of the glottis. In two other cases excision of a projectile in the abdomen cured the severe spastic obstipation or hyperperistalsis of the stomach. In four cases spastic constipation or spasm of the stomach was cured by appendicectomy or breaking up of adhesions. In one case cardiospasm and hyperperistalsis of the esophagus were cured by gastropexy. Spasm of the esophagus is the typical example of associative fixation of the irritation. In one case the woman had swallowed a thimble which stuck in the esophagus but was easily pushed down into the stomach and was soon voided in the stools. Since then she has had spasm of the esophagus; it comes on every time she has to do any darning. This monograph on spastic neuroses is accompanied by seven pages of bibliographic references, set solid.

Nonsuppurating Osteomyelitis in Adults.—In the two cases illustrated by Winkelbauer, there never had been any acute phase, but nearly the entire shaft of the humerus was the seat of necrosis that had developed in five and eight weeks after the first symptoms. Pain and swelling were the only symptoms, and the necrosis became spontaneously resorbed in one case with a complete cure and regeneration of the bone. In the other case the tendency to spontaneous healing was equally marked, but the process was hastened by removal of the sequester.

Suture of the Stomach.—Gara gives photomicrograms which apparently prove the superiority of a method of suturing the stomach wall which he advocates. He remarks that it is strange that ulcers do not develop at the suture point more often than they do, as the ordinary sutures actually invite suppuration. He draws up the entire stomach wall like the neck of a bottle, and takes the continuous suture through all the layers at the base of this neck. Then the mucous membrane is sutured together at the top of the neck, at the free edge of the mucosa. Then the whole neck of the bottle is pushed down inside the stomach and a Lembert suture taken above it. The microscopic findings with this and other methods of suture were compared on rabbits.

Artificial and Acquired Bursae.—Martin gives a histologic and biologic study of three cases in which an effusion formed in the cavity left by resection of a lipoma in the flank, the back of the neck or above the scapula. The effusion returned two or three times, and the fluid was like the synovial fluid. It deposited a fibrin-like substance which transformed the cavity into a kind of bursa. Experiments on dogs confirmed this sequence.

Treatment of Exstrophy of the Bladder.—Drachter cuts one of the ureters some distance above the bladder, and twists the bladder around to bring the mouth of this ureter on the lower side of the bladder. A ureter catheter is then introduced through this distal stump of the severed ureter and passed through the bladder into the other ureter. The proximal stump of the severed ureter is then implanted in the other ureter which thus serves as the outlet for both kidneys. The distal stump hangs down below the bladder and serves for a new urethra. The loosened bladder walls are drawn up to make a closed bladder, and the ureter stump that hangs down is brought through the muscular ring forming the anal sphincter, but without communicating with the rectum. The rectum wall is left intact. He applied this procedure in a boy of 6 in 1917. The proximal stump of the ureter was sutured to the skin at first and later implanted in the bladder. The boy is healthy and is continent during the day, attending school regularly. The urine is not clear, and the case is not decisive as to the value of the method, but it certainly has produced a continent bladder and one not made out of the bowel.

Fracture of the Neck of the Femur.—Bonn advises opening up the joint capsule to investigate conditions. If the inner capsule is extensively destroyed, the only recourse is to resect the head of the femur and bring the trochanter major into the acetabulum. Otherwise the fracture can be reduced and held in place with a screw, peg or wire. In the young, a movable joint is the aim, and in the elderly and the very heavy, ankylosis in a good position. Axhausen describes the complete necrosis of the proximal stump ten months after fracture of the neck of the femur in a lad of 16. It did not hinder the bony consolidation at the point of fracture, but arthritis deformans is under way and the bone shows a tendency to rarefaction.

Epigastric Hernia and Gastric Ulcer.—Smidt declares that only an exploratory laparotomy will reveal whether a gastric or duodenal ulcer accompanies an epigastric hernia. The irritation from the latter may well induce the ulcer, but it may escape all other means of investigation.

To Apply Extension to Pelvis.—Block's illustrations show the effectual traction and extension that can be realized in cases of luxation of the pelvis on one or both sides. A wire passed through the crest of the ilium on both sides allows traction and counter traction without interfering with the movements of the legs. Or the traction can be aided by peg or nail extension at the knee or above. The methods are illustrated and commended also for old congenital luxation of the hip joint, fracture of the femur with extreme dislocation, and in limb-lengthening measures.

Beiträge zur klinischen Chirurgie, Tübingen

1922, **126**, No. 2-3, Kraske Festschrift

*New Lines for Cancer Research. P. Meisel.—p. 337.
Case of Carcinoma of Small Intestine. A. H. Hofmann.—p. 383.
Ascarids Obstructing Common Bile Duct. W. Kauert.—p. 387.
Pathogenesis of Chronic Gastric Ulcer. T. Armbruster.—p. 390.
*Transgastric Excision of Gastric Ulcer. M. Stenglein.—p. 400.
Localization of Projectiles by Meisel's Method. Zwiffelhoffer.—p. 416.
Mathematical Drawings from Roentgenograms. E. Leinert.—p. 426.
Two Rare Congenital Deformities. Derg.—p. 429.
Traumatic Formation of New Bone Tissue. Weglen.—p. 432.
*Combined Prostatectomy. A. Läwen.—p. 445.
Etiology of Köhler's Disease of Metetarsal Bones. Axhausen.—p. 457.
Allergy from Surgical Standpoint. E. Melchior.—p. 479.
*Esophagoplastics. G. Lotheissen.—p. 490.
Ratio of Macroscopic and Microscopic Gastric Cancers. Volkmann.—p. 550.
Motor Function After Operations on Stomach. O. v. Dehn.—p. 555.
Ascarids in Esophagus and Biliary Apparatus. A. Reich.—p. 560.
Surgery for Injury of Liver. R. Reichle.—p. 601.
Anatomic Bases for Resection of Liver. E. Martens.—p. 620.
Experimental Roentgenization of Pituitary. H. Rahm.—p. 642.
Cysts of the Thyroglossal Duct. G. R. Boss.—p. 658.
Deformity After Resection of Children's Knees. A. Nussbaum.—p. 662.
Operative Treatment of Fracture of Patella. E. Staffel.—p. 697.
Schlatter's Disease as a Constitutional Anomaly. F. Mandl.—p. 707.
Spontaneous Dislocation of Wrist. H. Burckhardt.—p. 714.

New Routes for Cancer Research.—Meisel refers to efforts to induce the precancer changes by occluding arteries and veins or by other methods to reduce the nourishment of the region. He calls attention in particular to injection of acetone-celluloidin as a means for studying conditions better.

Transgastric Excision of Callous Gastric Ulcer.—Stenglein relates that two died in the fourteen cases reported; one from embolism the nineteenth day, the other from the injury of the heart from the anesthetic. In five cases the symptoms returned, and in one case, at least, there was recurrence of the ulcer.

Combined Prostatectomy.—Läwen extols the advantages of operating both through the perineum and through a suprapubic incision.

Reconstruction of the Esophagus.—Lotheissen refers to plastic operations in which the stomach is drawn up to make the new esophagus. He tabulates a total of 44 plastic operations for stenosis of the esophagus which were not completed and 45 cases that were completed. The jejunum was used in 25 and 34 cases in these groups, and the stomach in 17 and 4. The plastic operation was undertaken for cancer in 41 cases but was completed in only one case, and this patient died not long after. The total is thus 130 cases. He has applied the stomach method in 4 cases of stenosis from lye, and reports success in 2 of them. The stomach answered the purpose well in all, and he is thus responsible for 2 of the 3 permanent successes with this method out of the 19 in which it has been applied. He also reviews his experience and that of others with other methods.

Deutsche medizinische Wochenschrift, Berlin

July 14, 1922, **48**, No. 28

Protoplasma Hysteresis in Relation to the Rejuvenation Problem. V. Ruzicka.—p. 931.
*Treatment of Bite Wounds by Rabid Animals. Baumgarten.—p. 932.
*Finsen Baths in Tuberculosis of Larynx. O. Strandberg.—p. 935.
Effect of Inactivation by Heat on Guinea-Pig Complement and Human Serum. P. Hirsch and M. Liebers.—p. 936.
*Effects of Epinephrin on the Human Organism. Rothmann.—p. 936.
Perforated Gastric and Duodenal Ulcer from the Standpoint of Mortality. Wagner.—p. 937.
Various Positions of the Appendix. A. H. Hofmann.—p. 939.
*Cullen Sign in Diagnosis of Extra-Uterine Pregnancy. J. P. zum Busch.—p. 941.
Appendicitis and Gonorrhea in Relation to Salpingitis and Ovaritis. W. Förster.—p. 942.
Surgery of the Wrist and Hand. G. Ledderhose.—p. 943.
Technic and Diagnostic Value of Urinalysis. L. Casper.—p. 944.

Local Treatment in Rabies.—Baumgarten deplores the frequent tendency to neglect energetic treatment of the portal of entry of the rabies virus. It is well not to rely entirely on the antirabic vaccine but apply to the wounds the necessary prophylactic treatment, the most efficacious being for the patient to suck out the poison himself or have some one do this for him. To be effectual this has to be done very soon after the injury. According to Bollinger, fluid corrosives are better than the actual cautery as thereby all recesses of the wound are reached. Excision of the infected area, followed by cauterization, may still be regarded as effective. He deprecates the superficial use of a silver nitrate pencil. He emphasizes that when the bite is on the head antirabic vaccine may fail to establish immunity, and for this reason some antirabic institutes repeat the course of treatment. The experience at the Robert Koch Institute in Berlin has been that the percentage of late fatal cases is not thereby lessened.

Treatment of Tuberculosis of the Larynx with Finsen Light Baths.—Strandberg (Copenhagen) describes the technic and the excellent results of Finsen light baths in the treatment of tuberculosis of the larynx, tuberculous otitis media, tuberculous and other osteitis ossis temporalis, and lupus of the nose, mouth, pharynx and larynx. The whole body is subjected to irradiation with unconcentrated electric light. For sitting patients they use in the Finsen Institute in Copenhagen a room with floor space of 5.4 by 7 meters and a ceiling 4 meters high. As a protection to the eyes the walls are painted a dark blue. Two large carbon arc lights with no shade whatever are suspended 1.25 meters above the floor. The lamps have an amperage of 75, the usual voltage of the continuous current being from 50 to 53. Only a continuous, never an alternating, current is employed. From six to eight patients may be treated at once under two such arc lights. The patients change their position frequently in order that the different portions of the body may be reached by the rays. They sit as near to the light as the heat will permit—about a meter distant—and are entirely nude. Goggles are worn to protect the eyes. For recumbent patients three arc lamps of 20 amperes each are used. The lamps are suspended in a row and a patient may recline on either side, parallel with the lights, only two being accommodated at a time. For cachectic patients or in laryngeal tuberculosis, the first baths are for ten or fifteen minutes, increasing the time until the full period, which is here two and a half hours, has been reached. The light baths are given every other day. In some cases a bath every day might be better. Although a few patients are not materially benefited, about 50 per cent. are cured, if they take the full treatment. Recurrences may occur in some cases.

Epinephrin Tests in Differential Diagnosis.—Rothmann urges study of the variations in the blood pressure after intravenous injection of a weak solution of epinephrin as a valuable means for insight into the nature of nervous and other affections. He advises the plethysmograph as the simplest means for comparison of the effects.

Diagnostic Import of Discoloration of the Umbilicus.—Zum Busch reports the case of a woman of 60 with an ovarian cyst, which on removal proved to be much larger than a man's head. There was no intra-abdominal hemorrhage, and yet he noted a bluish-green discoloration of the umbilicus region closely resembling the discoloration illustrated in Cullen's article on the subject. It is therefore demonstrated that Cullen's sign is not always evidence of intra-abdominal hemorrhage, much less of an extra-uterine pregnancy.

Deutsche Zeitschrift für Chirurgie, Leipzig

July 1922, **172**, No. 1-4. Dedicated to G. Pommer

*Gastric, Duodenal and Peptic Ulcers. H. v. Haberer.—p. 1.
*Gallbladder Operations without Drainage. Haberer.—p. 78.
*Operative Treatment of Perforated Ulcer. E. Paul.—p. 94.
*Gastro-Enterostomy for Ulcer. O. Maier.—p. 117.
Hard Ulcer plus Primary Cancer in Stomach. S. Mitterstiller.—p. 152.
Experimental Fatty Degeneration of Kidney. O. M. Chiari.—p. 161.
Three Unusual Tumors. K. v. Dittrich.—p. 178.
*Microscopic Findings in Bone Cysts. F. J. Lang.—p. 193.
*Operative Treatment of Fracture of Humerus. W. Pfanner.—p. 211.
Fracture of Clavicle. W. Pfanner.—p. 217.
Treatment of Exophthalmic Goiter. H. Czermak.—p. 235.
Suprarenalectomy in Treatment of Epilepsy. O. M. Chiari.—p. 244.
Tympanism of Bladder. W. Pfanner.—p. 247.
Brain Disturbances After Ligation of Artery. H. Czermak.—p. 253.
Electric Excitability After Protein Therapy. O. M. Chiari and Gamper.—p. 265.

Gastric, Duodenal and Peptic Ulcers.—Haberer publishes here six lectures on this subject delivered by special invitation at two Spanish universities. His statements are based on 1,156 operative ulcer cases in which he has operated at Innsbruck. The group of resection cases comprises 810, with 71 pyloroplasty cases and 275 gastro-enterostomies. In his last 400 cases of gastric or duodenal ulcer, the ulceration was multiple in 145, sometimes in both stomach and duodenum. In one case he found thirty ulcers. In another there was a large ulcerating carcinoma of the pylorus with a hard ulcer in the lesser curvature. This was of several years' standing and the carcinoma was of recent development. Smooth recovery followed the resection. The mortality after resection in his later cases has been scarcely over 2 per cent. He never had a peptic ulcer develop after resection in a total of 810 cases, but 12 postoperative peptic ulcers were known in 71 pyloroplasty operations and in 3 of 275 gastro-enterostomy cases. In one case the interval was eight years. He has not had a peptic ulcer develop since he abandoned pyloroplasty, but he has operated in 30 cases for peptic ulcer after operations by other surgeons. He makes a point of resecting the excluded pylorus in these cases.

Cholecystectomy Without Drainage.—Haberer has been able to suture the abdominal incision at once, without drainage, in seventy-seven cases free from infectious complications, and there were no disturbances for which his immediate closure of the abdomen could be held responsible.

Perforated Ulcer.—In Paul's twenty-seven cases, the upper abdomen was drawn in, the depression shaped almost like a canoe, in all but three cases. There was pronounced and diffuse peritonitis in every case, but the patients recovered after resection except those practically moribund. Reexamination later showed better results after resection than after suturing the perforation plus gastro-enterostomy, while these indirect methods expose to danger of peptic ulcer. The decision as to choice of treatment should be based on the general condition rather than on the number of hours that have elapsed.

Disadvantages of Gastro-Enterostomy for Ulcer.—Maier cites some recent publications which demonstrate that a recent ulcer can become transformed into a chronic hard ulcer notwithstanding treatment by gastro-enterostomy; also that an established hard ulcer may persist unmodified by a gastro-enterostomy, and that the latter is powerless to prevent the recurrence of the ulcer and its perforation later. In Kreuter's 504 cases of gastro-enterostomy, malignant disease developed later in 7 cases. A relaparotomy is often necessary after gastro-enterostomy even without a peptic ulcer. In 15 of Maier's 20 relaparotomy cases the pylorus was found still patent; in 4 of these the pylorus had been supposedly closed. In 7 of the cases the ulcer had persisted apparently unmodified by the gastro-enterostomy during the seven weeks' to eleven years' interval. This and other palliative operations are liable to be followed by peptic ulcer. The verdict is thus decidedly unfavorable for gastro-enterostomy as treatment for gastric ulcer.

Cysts in Bones.—Lang's microscopic studies confirm that a traumatic hematoma is the first factor in the development of a solitary cyst in a bone.

Fracture of the Humerus.—Pfanner gives an illustrated description of a case of fracture just above the condyle in which he utilized the extensive callus that had formed, twisting it around and using it to bridge the gap of 5 cm. The lower end of the central stump had developed osteomyelitis and atrophy compelling resection. The elbow joint was not molested nor the distal epiphyseal cartilage. The periosteum had separated from the shaft, and this had entailed the redundant growth of callus.

Jahrbuch für Kinderheilkunde, Berlin

August, 1922, **96**, No. 2-3

*Epituberculous Infiltration of Child Lung. B. Epstein.—p. 59.
*Special Features of the Newly Born. B. Herzfeld.—p. 75.
*Endogenous Infection and Immunity in Infants. A. Adam.—p. 86.
Intestinal Flora and Intestinal Functioning. A. Adam.—p. 93.
*Acid Content of Urine During Tetany. P. György.—p. 104.
*Influence of Food on Urine in Infants. P. György.—p. 109.
*Influence of Hormones on Metabolism. H. Vollmer.—p. 133.
*Growth Pallor. II. K. Benjamin.—p. 147. Cont'd.

Epituberculous Infiltration of Child Lung.—This term has been applied to the condition in which there seems to be extensive pulmonary tuberculosis in children up to 3 years old, and yet the children recover. Roentgenoscopy shows an even, heavy shadow of the entire upper lobe, but the children's health seems very little impaired for months, and they finally recover. Necropsy after death from intercurrent disease has not cleared up this condition. A case is described in detail with illustrations in which necropsy showed that the infiltration was unmistakably tuberculous, and a primary tuberculous focus was found in the upper portion of the superior lobe. Enlarged bronchial glands on the same side are a constant finding. It is evident that a true tuberculous process in very young children—possibly with scanty tubercle bacilli—can run a mild, localized course under the clinical picture of an epituberculous infiltration. It calls for treatment like any tuberculous affection, and this should never be neglected so long as it is impossible to distinguish positively between a tuberculous and epituberculous infiltration. Possibly artificial pneumothorax might be indicated. At necropsies, the primary focus should be sought, and its relation to the epituberculous infiltration by pressure on a bronchus, atelectasis, etc.

The New-Born Child.—Herzfeld discusses the peculiarities of the newly born in respect to weight, temperature and jaundice. His experiences at Riga have convinced him that if there is any period of asphyxia during the expulsion stage, so that the child swallows the mixed vaginal and amniotic fluids, jaundice almost inevitably follows. Decomposition of the lochia is always noted in cases of this kind, although the woman may not show any other signs of morbidity. The vaginal bacteria are not virulent enough to affect the mother, but they induce jaundice when swallowed by the infant; there is almost always slight fever with the jaundice. He treats the infant with jaundice, therefore, with systematic purging and reduces the intake of breast milk, shortening the feedings and allowing only four instead of five. This explanation of icterus neonatorum as a "swallowing jaundice" throws light on the larger proportion of cases among the first-born. It also emphasizes the necessity for clearing out the mouth at once to prevent the swallowing; omitting this, he has had jaundice develop unfailingly. He clears out the mouth by aspiration with a soft catheter, warning against the danger of injuring the mucosa when the mouth is swabbed out with cloth and finger. This does not clear it completely, even at the best. He reiterates in conclusion that the liver is not to blame for icterus neonatorum, and that the more skilful the management of the delivery, the rarer the icterus.

Endogenous Infection and Immunity.—Adam explains that the freedom from bacteria of the small intestine is due to both a purely physiologic and a biologic immune process in young infants.

Elimination of Acid in Infants' Urine.—György discusses the influence of tetany and also the influence of the carbohydrates and fat of the food on the elimination of acid in the urine of infants, and the action of the buffer system.

Influence of Hormones on Intermediate Metabolism.—Vollmer fed or injected thyroid, parathyroid, suprarenal, thymus, pituitary or ovarian preparations in a large number of infants, and tabulates the metabolic findings thereafter. The research was done during the winter and stopped with the opening of spring as the metabolism is always speeded up during the early days of spring. The elimination of acid in the urine was reduced by all these treatments except parathyroid treatment, which increased it. He assumes from this research that all these organs, except the parathyroids, stimulate the metabolism, while the parathyroids depress it. This sustains the importance of the endocrine system in the pathogenesis of rachitis and tetany. A pathogenetic connection is further sustained by the hormonal spring crisis of the two diseases. The exogenous factors of each may influence the endogenous factors further. Tetany is liable when the metabolism tends to alkalosis; rachitis, when the trend is to acidosis.

Growth Pallor.—In this second communication, Benjamin discusses the changing proportions of the growing child in their effect on cardiovascular functioning, etc. He remarks that the greatest progress realized in the last thirty years in our knowledge of the physiology of the circulation is that the Fick law of muscular contraction has been found to apply to the muscle fibers in the heart as well as to striated muscle. He emphasizes that the growth in length of the heart fibers is as important as the growth in thickness.

Monatsschrift für Geb. und Gynäkologie, Berlin

July, 1922, **58**, No. 3-4

The Migration of the Ovum. E. Zweifel.—p. 119.
Development of Interstitial Gland. W. Lahm.—p. 128.
Etiology of Suppuration in the Symphysis. Benthin.—p. 141.
Rupture in Cesarean Section Scar. P. Schugt.—p. 146.
Management of Extra-Uterine Pregnancy. O. Khoór.—p. 154.
*Interrupted Tubal Pregnancy. K. Fink.—p. 166.
*Artificial Vagina from Intestine; Two Cases. Rosenstein.—p. 176.
*Laparotomy for Myoma. S. v. Wachenfeldt.—p. 184.
Cure of Chorio-Epithelioma Under Roentgen Rays. H. Naujoks.—p. 189.
*Actinomycosis of Female Genitals. E. Huffer.—p. 197.

Intratubal Termination of a Tubal Pregnancy.—Fink asserts that tubal pregnancy is probably more common than we imagine, the ovum dying and its elements being more or less completely resorbed. He describes some typical instances showing the variety of the modes in which a tubal pregnancy may thus be spontaneously terminated.

Artificial Vagina.—Rosenstein reports a second case in which a vagina was made from a loop of intestine. He adds that recent reexamination of his first case has confirmed the reliability and value of this method of making a new vagina.

Laparotomies for Myoma.—This fourth series brings to 700 the number of laparotomies for myoma at the Lund gynecologic clinic. The operative cases formed 42.8 per cent. of the total myoma material, and the uterus was removed in 98; supravaginal amputation was done in 537 and in 36 cases the myoma was enucleated and in 29 the pedicle was cut. Malignant degeneration occurred in 6 cases; all were sarcomas.

Actinomycosis of Female Genitals.—Huffer adds one more case to the records of actinomycosis of the uterus. His patient was a woman of 40 who had borne twelve children. The last delivery was two months before the actinomycosis was discovered and the uterus removed. The left ovary and tube seemed to be normal.

Münchener medizinische Wochenschrift, Munich

July 14, 1922, **69**, No. 28

Encephalitis and Postinfluenzal Encephalopathy. R. Jaksch-Wartenhorst.—p. 1033.
Antibody Studies in Tuberculosis. H. Heinemann.—p. 1035.
Droplet Infection in Tuberculosis. G. Seiffert.—p. 1038.
Recoverability of Impaired Function of Cerebrum. Von Mayendorf.—p. 1040.
Theory of Parenteral Protein Therapy. B. O. Pribram.—p. 1041.
*Freezing Point of Blood in Gastric Ulcer. Hofmann.—p. 1042.
Character of Cellular Immunity in Relation to Predisposition to Disease. A. Theilhaber.—p. 1044.
An Epidemic of Icterus. O. Beyreis.—p. 1044.
*Petruschky and Ponndorf Tuberculin Treatment of Tuberculosis. E. Hofmeister.—p. 1047.
Report on Sixty-Five Twilight Sleep Births. M. Werner.—p. 1049.
Metapneumonic Gluteal Abscess. W. Stoye.—p. 1050.
Case of Acute Articular Rheumatism Beginning in Larynx. H. U. Ritter.—p. 1051.
When and How to Treat Heart Pains. Grassmann.—p. 1052.

Freezing Point of the Blood with Gastric and Duodenal Ulcer.—Hofmann presents this preliminary report on the results of his investigations. The blood was obtained from patients, in almost every instance, at the time of operation. The findings ranged commonly between —0.50 and —0.60 C. In 15 cases of gastric ulcer he found two normal values of —0.56 C. He found in the 15 duodenal ulcer cases five normal values. In 10 cases he found abnormal values ranging down to —0.60 C. and up to —0.51 C. Similar variations were found in 13 cases of carcinoma and in 5 cases of perforated ulcer. In one case of perforated ulcer that resulted fatally the freezing point was —0.87.

Tuberculin Treatment of Tuberculosis by the Percutaneous and Scarification Methods.—Hofmeister reports that he has employed the Petruschky and the Ponndorf tuberculin methods in nearly 2,000 cases and he has never noted any injuries whatsoever resulting therefrom. With the exception of from 20 to 30 cases, an improvement in the patient's condition was noted. Systematic heliotherapy applied to various parts of the body was found to be an excellent aid in the treatment. He is convinced that the success of both the Petruschky and the Ponndorf methods is due solely to the action on the skin, and expresses the hope that before long the skin will be recognized and used as the chief organ of defense against infectious diseases in general.

Zeitschrift für Krebsforschung, Berlin

Aug. 10, 1922, **19**, No. 1

*Comparative Histology of Basaliomas. E. Krompecher.—p. 1.
Case of Primary Cancer of Bronchial Mucosa. K. Gutzeit.—p. 30.
*Tar Cancer. H. Jordan.—p. 39.
*The Anamnesis with Mammary Cancer. A. Simons.—p. 56.
Cancer Problems from Standpoint of Immunity. W. Caspari.—p. 74.
Physical Chemistry of Carcinoma. N. Waterman.—p. 101.

Basal Cell Tumors.—Krompecher states that the basal cell tumors form a group apart as distinct as the adenomas, fibromas, acanthomas (prickle-cell tumors), lipomas, etc. The basaliomas may be of benign or malignant nature. The group includes multiple tuberous epitheliomas, cystic adenoid epitheliomas, the multiple basaliomas of the scalp, the single basaliomas of the face region, and basal cell cancers.

Occupational and Experimental Tar Cancer.—Jordan comments on the fact that the mechanical injury from coal dust does not induce cancer while there is no mechanical injury from coal tar, with which cancer is common, as also with soot. He reports that coal tar induced cancroids in four months in 100 per cent. of the white mice he treated with it. The residue of the tar after distillation induced production of the precancerous condition in half the time required for the whole tar.

Mammary Cancer.—Simons states that in 231 women and four men with mammary cancer from two to five years or more had elapsed since the tumor was first noted in 50.2 per cent. of the cases. There was recurrence after the operation in ninety of the 134 given radical treatment, and this included from 50 to 71.4 per cent. of those who had allowed such a long interval to elapse before they had applied for treatment.

Zeitschrift für Urologie, Leipzig

1922, **16**, No. 7

*Blood-Borne Disease of the Kidneys. Schlayer.—p. 297. Conc'a.
*Surgery of the Kidneys. A. v. Lichtenberg.—p. 301.
*Progress in Disease of the Bladder. Ringleb.—p. 308.
Tuberculin in Urologic Diagnosis. W. Karo.—p. 316.
Nephrolithiasis with Spondylarthritis plus Ankylosis. Israel.—p. 321.

Blood-Borne Kidney Disease.—Schlayer reviews the progress of the last ten years in this line. Nothing is known absolutely as yet as to the connection between high blood pressure and the kidneys. There is no evidence that a chemical agent is responsible for the high blood pressure, but testimony is accumulating that the kidneys may be responsible for it in various ways. It may develop further during anuria of mechanical origin, the outflow itself being apparently concerned in it. Anuria from clamping or otherwise shutting off both renal arteries does not raise the blood pressure. The war forced every physician to study the problems of the internal pathology of the kidneys. The danger is that certain things which are by no means fully established we are inclined to accept as absolute facts. Another danger is that in our zeal for classification we are crowding with more or less force each case of nephritis we encounter into the frame in which we think it should fit. He reiterates that, in the strict sense, "there are no kidney diseases, only persons with diseased kidneys." The great progress of the last ten years is mainly in the fact that instead of regarding merely the kidney alone we study the relations between them and the entire organism as the main problem.

Progress in Surgery of the Kidneys.—This and the preceding article were read at the tenth anniversary meeting of the Berlin Urologic Society. Lichtenberg emphasizes the present trend to be more conservative in operating, especially with hydronephrosis. Decapsulation of the kidney is a purely symptomatic measure. The indications for it and what to expect from it are questions for the future to decide. In eclampsia, it is still a question whether the cases with and without necrosis of the kidney cortex differ qualitatively. We are able now to detect infection of the calyx system in an early stage, and combat it by conservative operative measures, before the parenchyma is seriously involved. We have also learned that menacing infection of the kidney pelvis may harmlessly subside when we have cured or cut out the primary bacterial focus elsewhere. At present it is impossible to save a tuberculous kidney. The progress in this line has been in the earlier differential diagnosis, and he remarks that this has been much facilitated by sacral anesthesia to allow investigation of the irritable bladder in tuberculosis of the urinary apparatus. The causes and conditions entailing calculi in the kidneys are still unknown, and in about 10 or 15 per cent. of the cases there is recurrence of the lithiasis after removal of the calculi. This figure is probably too high, as in some cases existing concretions may have been overlooked, or fragments left. The indications with a calculus in the kidney may be regarded as the same as with a gallstone in the gallbladder or cystic duct; a calculus in the ureter, the same as one in the common bile duct. To wait for six months is decidedly risky. The malignancy of tumors in the kidneys is probably due to their being past the operable stage when first differentiated. Hematuria does not occur at any stage in more than 40 per cent. of the cases. The changes in the roentgen outline of the kidney pelvis and the displacement of the ureter are valuable aids in detection of the tumor. Most of the clinical symptoms, objective and subjective, are alike in all forms of kidney disease, and this uniformity of the clinical manifestations and the alternation

of acute phases with silent periods are very baffling, and mislead both the patient and the physician to allow valuable time to slip past. It is in this line that we must make further progress.

Progress in Diseases of the Bladder.—Ringleb remarks that the war experiences seem to have settled that enuresis is a purely functional affection. He accepts that there are four centers in the brain cortex that govern bladder functioning: one, sensory, that perceives the pressure from the urine; a motor center that governs the relaxing of the sphincter, and another that governs its contraction, and, finally, a center in the frontal lobe which controls the above three centers. These bladder centers are symmetrically arranged in both hemispheres, and a functional neurosis may affect any one or all of the links in the chain. In treatment of disease of the urinary passages, antiserums and vaccines have displayed noteworthy results when the infecting agents have invaded the deeper tissues; processes in the epithelium yield better to local measures. Further progress has been with tuberculin treatment after an operation on the tuberculous bladder. He mentions as special progress the method of treatment by injection of calomel in oil into the bladder while potassium iodid is being taken internally. He has treated numbers of patients in this way, under careful cystoscopic control. He adds that not enough heed is paid to the danger of contagion from persons with vesical tuberculosis scattering tubercle bacilli by their abnormally frequent micturition.

Some have reported excellent results from heliotherapy in the painful tenesmus of vesical tuberculosis. Others have reported success with radiotherapy; several have reported good results in tuberculosis and cancer, but no absolute cures have been reported. Among the various methods for correcting exstrophy of the bladder he calls attention to the advantages of Lengemann's modification of Makkas' technic. The new bladder is formed from the entire ascending colon, cecum and a 30 cm. stretch of the ileum. The ureters with the trigonum are implanted in the cecum shut off completely from the passage of fecal matters. The appendix is used for the outlet for the urine. There is no traction or tension, and with this extraperitoneal procedure the operative risk is minimal. By excluding the entire ascending colon there is no back-stagnation of feces. Verhoogen applied a procedure something like this for cancer of the bladder. Fink and Roloff have further modified it. Schloffer made an artificial anus in a boy of 16 to correct exstrophy of the bladder, and closed the distal sigmoid flexure below. Three weeks later he united the bladder and the rectum, and drew up and sutured together the walls of the bladder so far as possible. Ringleb says of prostatectomy, "The consensus is still in favor of the suprapubic route, notwithstanding Voelcker's interesting method." (It was described in THE JOURNAL, Feb. 12, 1921, p. 487.) Progress has been realized in the construction of the cystoscope and its management.

Hospitalstidende, Copenhagen

July 5, 1922, **65**, No. 27

*Acute Poliomyelitis in Adult. K. Winther.—p. 429. Conc'n.

July 12, 1922, **65**, No. 28

*Chronic Alcoholism. E. J. Larsen.—p. 445.
*Recent Research on Ascaridiasis. V. Jensen.—p. 457.

July 19, 1922, **65**, No. 29

Gregor Mendel's Work. O. Thomsen.—p. 461.

Acute Poliomyelitis in Adult.—In Winther's case the clinical picture was entirely that of an extremely acute and grave Landry's paralysis. The case was sporadic, and the man died in eighteen hours after the onset of the paralysis. The paralysis was descending, the result of destruction of the cells governing motor function of the respiratory muscles.

Chronic Alcoholism.—Larsen was unable to find anything suggesting dysregulation in eleven cases of chronic alcoholism, including four with Korsakoff's psychosis. With genuine epilepsy, dysregulation is constant and pronounced. This difference in the metabolic findings seems to exclude any direct connection between alcoholism and a predisposition to epilepsy in the descendants. The degeneracy which predisposes to abuse of alcohol seems to be of another nature from that which predisposes to epilepsy. By "dysregulation" he means an inability to maintain the normal neutrality balance.

Recent Research on Ascarids.—Jensen refers in particular to Fülleborn's demonstration of living ascarid larvae in ascarid ova kept in liquor formaldehydi for four or five years. He reproduces one of Fülleborn's illustrations showing an ascarid larva in a blood vessel, the larvae making the round from bowel to lung in the blood vessels, and thence to the throat and the digestive tract. In the latter the sexual phase takes place. This migration of ascarid larvae has been traced in guinea-pigs but not in man as yet. Yoshida found the larvae in a scrap from a guinea-pig's lung, and seventy-five days later ascarid ova were numerous in the feces.

Ugeskrift for Læger, Copenhagen

July 27, 1922, **84**, No. 30

*Hermaphrodism. K. Sand.—p. 921.
Experimental Nystagmus. LXXXI. R. Lund.—p. 934.
Colloidoclasis, Especially in Asthma. S. Jørgensen.—p. 943.
*Arrhythmia Treated with Quinidin with Fatal Outcome. L. Holm.—p. 955.

Hermaphrodite Problems.—The child of 10 was assumed to be female at first, and then the male sex was supposedly recognized and the child was brought up as a boy. Certain feminine traits aroused apprehension then, and an exploratory operation was done. Even this failed to decide the question of the sex, as on one side the sexual gland seemed to be a testicle and on the other side it seemed to be an ovary. Each corresponded to an early fetal structure. Whether to remove the sexual gland on one side or the other is the question, and it has been decided to temporize. Puberty may reveal a decided trend to one sex, and then removal of the other sexual gland, gland grafting and plastic operations can be considered. In all such cases, Sand remarks in conclusion, the greatest caution and foresight are imperative before interfering in any way. We must not forget the danger of any arbitrary uprooting of deep seated tendencies.

Continuous Arrhythmia with Fatal Ending After Quinidin.—Holm gave quinidin to a woman of 55 who had been in the hospital for two months seeking relief from digestive disturbances from extreme gastroptosis. The arrhythmia was extreme, the pulse 180, and the patient was very nervous. She was given quinidin during one week, and the heart action became regular; the pulse gradually declined to 74, and the patient felt well and lively. Nine days after the last dose of quinidin there was sudden fatal collapse. No symptoms of failing compensation had been observed, and necropsy showed the auricles much dilated. No thrombosis. Holm queries whether the quinidin might have inhibited the functioning of the auricles.

Aug. 17, 1922, **84**, No. 33

*Urine Findings in the Tuberculous. J. Paludan.—p. 1036.
Serotherapy in Pneumococcus Sepsis; Recovery. A. Nyfeldt.—p. 1044.
*Hydronephrosis from Abnormal Renal Vessel. S. Hansen.—p. 1047.

Urine Findings in the Tuberculous.—Paludan states that albuminuria was found in 143 of the 2,787 tuberculous patients at the Silkeborg sanatorium. In 132 in this group the albuminuria was evidently due to toxic action from the tuberculosis. In 214 free from any signs of kidney disease tube-casts were found in 72 per cent., and the urine of 62.6 per cent. contained red blood corpuscles. The percentage of cases with tube-casts and microscopic hematuria increased in the advanced stages of the disease, and the same proportional increase was evident in the numbers of casts and of erythrocytes. He ascribes them to the toxic action of the tuberculous toxins.

Hydronephrosis from an Abnormal Blood Vessel.—The hydronephrosis was a necropsy surprise, the woman having died from sarcomatosis. The left kidney was enormous, and a branch of the renal artery and of the vein formed a cord lifting up the ureter. When this cord was cut the ureter straightened out. Such cases confirm the possibility of conservative treatment of hydronephrosis. No instance is known of infarction or necrosis following such an operation. The possibility of a supernumerary vessel should always be borne in mind in operating on the kidney for any cause.